THE OIL WEEKLY

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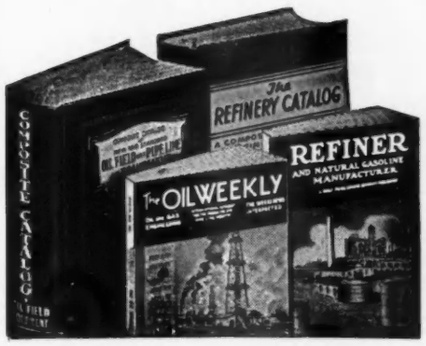

SPECIALIZED OIL JOURNALS
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The Oil Man's Calendar

MAY 5–8	American Gas Association, Natural Gas Section, Dallas.
10–11	West Texas Geological Society, Spring Field Trip, Fort Worth.
13	Independent Petroleum Association of America, Semi-Annual Meeting of the Board of Directors, San Antonio.
19–22	American Petroleum Institute, Mid-Year Meeting, Tulsa.
26–29	National Association of Purchasing Agents, Chicago.
29–31	National Oil Scouts & Landmen's Association, Dallas.
JUNE 7	Illinois-Indiana Petroleum Association, Robinson, Illinois.
9–10	Liquefied Petroleum Gas Association, Pacific Coast Section, San Francisco.
16–20	American Society of Mechanical Engineers, Petroleum Division, Kansas, City, Mo.
19–20	Pennsylvania Grade Crude Oil Association, Bradford.
20–21	Kentucky Oil & Gas Association, Mid-Year Meeting, Lexington.
SEPT. 8–12	American Chemical Society, Atlantic City. National Petroleum Association, Atlantic City.
NOV. 2–7	American Petroleum Institute, Annual Meeting, San Francisco.

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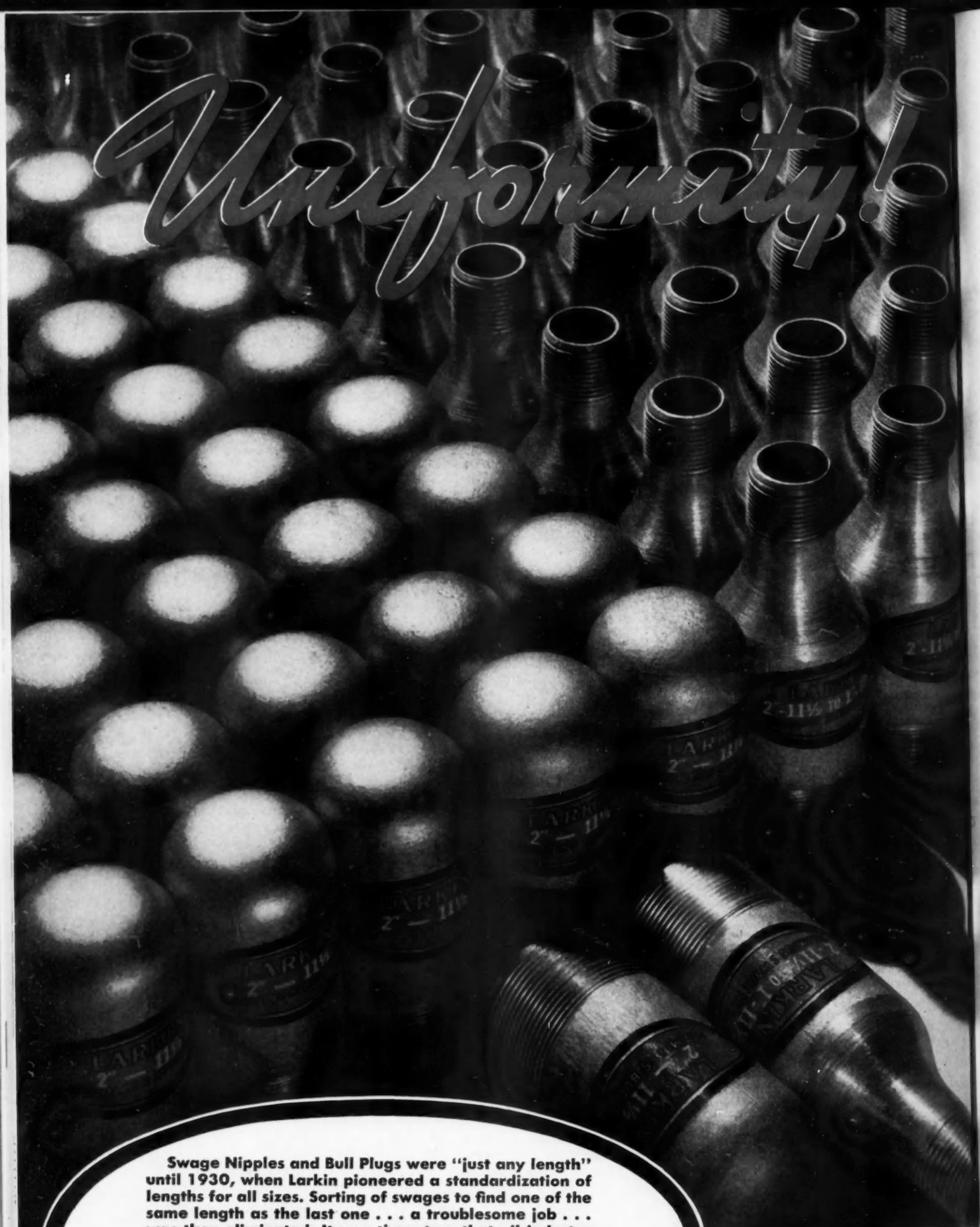

Swage Nipples and Bull Plugs were "just any length" until 1930, when Larkin pioneered a standardization of lengths for all sizes. Sorting of swages to find one of the same length as the last one . . . a troublesome job . . . was then eliminated. It was then, too, that oil industry hook-ups began taking on the neat appearance of having been planned. Larkin swages and bull plugs are not only just uniform in length. They're uniform in thickness, in shape, in every minute detail. Yes . . . by the carload . . . they're all alike!

See pages 1435-43, your 1941 Composite Catalog.

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THE OIL WEEKLY

MAY 5, 1941

VOLUME 101 NUMBER 9

The Changing Panorama

WHY Roumanian oil fields and refineries were not destroyed before the Nazis moved in, as was thought to have been planned, is a question which has been asked by many Americans. The answer is simple. Before the Nazis moved in, the Iron Guard, which was very pro-Nazi, got hold of the fields and refineries and this, coupled with the pressure which Germany was able to bring to bear on the Roumanian government, put a stop to that government's plans to destrov fields and refineries.

As to why the British did not bomb Roumanian refineries after the Nazis moved in and were ready for their campaign, or after it started, we do not know, but we wonder.

In the case of France, a report is current that plans had been made, at the instance of the government, to destroy tankage and refineries in what is now occupied France. The order "to be ready to destroy the properties" came a few days before German occupation—but the order to destroy them never came. Instead an order was received to countermand the previous order. Whether this countermanding order came from officials of the French government, or was a forgery, probably will never be known. But destruction which had been planned never took place.

No Shortage Yet . . .

Reports that a serious shortage is developing in the Gulf Coast area on oil country supplies, including certain sizes of tubular goods, have not been confirmed by investigations made during the week by THE OIL WEEKLY. The purchasing departments of most of the larger companies, and the sales departments of some of the leading suppliers were contacted. There was some difficulty mentioned in securing aluminum products. That situation should be cured shortly through priorities already granted. Certain alloy steels are reported tight, but generally purchasers and suppliers alike reported no difficulty in securing machinery and tubular goods. Reports that surface casing could not be secured were declared unfounded by tubular goods companies, one of whom stated that on certain sizes it is the practice of the company to accumulate orders for sizeable runs. This company said it had plenty of surface casing stock already manufactured. The foregoing does not mean that the situation is as "loose" as it was several months ago, but the survey showed that there is no actual shortage now.

Shipments to Japan . . .

January shipments of "motor fuel" 68-octane gasoline to Japan from the United States amounted to 310,671 barrels. Shipments in drums in February amounted to 33,000 barrels. During February an embargo was placed on gasoline going in steel drums to points outside of the United States other than Great Britain. Figures on cargo shipments in February are not yet available.

Higher Texas Taxes . . .

Texas oil producers have lost more than one fourth of the advantage they gained when crude prices were advanced an average of 6½ cents per barrel recently. Hereafter they will pay an increased state tax of over $8,000,000 on production.

Henceforth, the combined oil and gas industry of Texas will pay a state tax enlarged by $11,000,000 annually. Thus, this one industry will contribute 50 percent of the new $22,000,000 of taxes enacted by the state legislature last week. Consequently, state taxes levied on petroleum and gas, not including gasoline sales, local taxes or motor vehicle levies, will amount to a total of approximately $50,000,000 per year. Motor fuel sales furnish nearly an equal amount.

Largest single item in the new tax measure was the increased levy on crude oil production, which is expected to raise an additional $8,000,000 or more, or a total of $25,000,000 per year. Gas production was taxed an additional $700,000 also. For the first time there will be taxes on gas processing and oil-well servicing.

In addition to direct taxes upon this industry, levies against closely allied business, such as carbon black, motor vehicle sales, commercial buses and trucks, were increased by an estimated $3,500,000.

Legislators held the bill up as conforming to the principle of taxing those able to pay.

Scientists for U. S. Defense . . .

The United States Civil Service Commission has announced that petroleum technologists are needed for the defense program, and that it will receive applications for permission to take competitive examinations until December 31, 1941.

Positions are open to persons experienced in production, engineering, and scientific research in the fields of petroleum, fuels, explosives, plastics, minerals and other groups. Salaries range from $2600 to $5600 annually, with service both in Washington and in the field.

Price Fixing Delayed . . .

Threats of federal price fixing on petroleum products which were reported last week have not materialized and now the rumor has it that oil is not on the immediate agenda.

Two Letters on Illinois Conservation Law

Below will be found two letters dealing with the proposition of a conservation law in Illinois. One, opposing such legislation and setting forth the reasons for the opposition to such proposed law, is written by Dorsey Hager of Centralia, Illinois, a geologist, whose oil interests have been found in many parts of the United States, until fairly recently, when he moved to Centralia.

The other, written in reply, is from Ray L. Dudley, publisher of The Oil Weekly, whose editorial of April 21, dealing with the need of a sound conservation law in Illinois, was the occasion of Mr. Hager's letter.

Mr. Hager Writes—

DEAR MR. DUDLEY:

I noticed your editorial in the April 21 issue of THE OIL WEEKLY, anent *"The Selfishness of Illinois in Not Passing Proration Legislation."* Did you ever stop to think that a major proportion of our operators in Illinois outside of the large companies came here because this area offered opportunities that did not exist in Texas for men without a lot of money? Shallow drilling and low cost operation enabled many men who were flat broke in Texas, Oklahoma, Louisiana and Kansas to get on their feet. These men certainly don't want to see their means of livelihood curtailed. Illinois is developing a group of "home-producers" who naturally desire to take advantage of the opportunities offered here and who feel no obligations to other states but do want to feel their obligations to the nation.

Mr. "Tex" Harvey, a well-known operator who made a fortune in Illinois, has now returned to Texas and recently opened an oil field in Anderson County. When he came here he was in far from affluent circumstances. There are numerous other operators in the same position. You fail to realize, perhaps, that only those operators who were in good positions before proration in the other states have been able to stay there and survive.

Naturally we are selfish in this state in wanting to keep free of oil control when there is no need of it. We can even grant some waste in producing oil in the state in the past. Also I am frank to say that our gas-oil ratio here is far less in proportion than is found in Texas and I doubt whether with the low gas pressure here more production could be obtained from the erratic sands in Illinois by production control than would otherwise be obtained. That is a highly debatable point. It might also interest you to know that road strips are almost a thing of the past and that many of the evils that have been stressed in this state will not recur. My own can-

[*Continued on first column, opposite page*]

We Reply—

MY DEAR MR. HAGER:

Replying to your letter of April 23, I am afraid that you have allowed your antagonism toward proration to get you on the wrong side of the fence with reference to *conservation,* because the editorial to which you refer very plainly said in its opening paragraph "A sane *conservation* law for Illinois during the past few years would have been of great value to operators, big and little alike, in that state, from the standpoint of ultimate profits and would have been of similar benefit to the public in a greater ultimate recovery of crude oil." Yet the opening paragraph of your letter in reply assumes that we meant *only* proration.

It would be most difficult, nowadays, Mr. Hager, for any American citizen to oppose *conservation,* sanely undertaken. It is possible that in the innermost recesses of your mind, you have convinced yourself that a sane conservation law cannot work without some kind of proration, and that you are willing to operate under conditions which actually produce waste, rather than to accept even the semblance of *proration?*

Yes, I realize that many Illinois operators, possibly the majority, went to Illinois from other states because Illinois afforded great opportunity, but I am sure that you cannot possibly mean that they abandoned their operations elsewhere because Illinois afforded a wide-open chance to produce without regard to conservation laws. I know that few, if any of these operators, disposed of their properties outside of Illinois, but on the contrary, as you reveal in the second paragraph of your letter, some of them, with the increased stake they made in Illinois, returned to states having *proration* and operated successfully, thus indicating that they felt that they could operate profitably in states where conservation rules applied, even if proration were necessary to enforce some of them.

In your first paragraph you refer to our editorial "anent the Selfishness of Illinois in Not Passing Proration Legislation" (the capital letters are yours). The use of the word "selfishness," Mr.

[*Continued on second column, opposite page*]

Hager . . .

did opinion is that putting oil control under a commission and giving it full control of oil production in Illinois would not result in increasing production, and in its train there would be a set of evils evolved that would be similar to those that happened in the early stages in Texas, Louisiana, and Oklahoma.

Fortunately for this state, the oil producers are not letting themselves be stampeded by the cry of federal control and this will be one state which will not be regimented and stabilized like so many other oil states. It is a pleasure to realize that the oil men are not subservient to the major oil companies as is the case in other oil states. There is something to be said for a man's freedom and independence. Producers in the oil states under proration have become so closely held in line that their personal initiative has suffered. They feel that to get anywhere they must first consult the wishes of the major companies. This may not hold for all the independents but there is enough of such feeling to give the majors absolute control. In Illinois, thank God, a man can consult the major companies if he wants to but he isn't bound to do so and the feeling of most producers is to go ahead regardless of consultation with the majors, though he prefers to go along with them and not in conflict with them.

I have talked with too many engineers within the state and know conditions here too well to feel that there is any unanimity regarding the efficiency of recovery methods as applied to this state. Any losses that may result through lack of engineering efficiency are far more than offset by the gains obtained by freedom of development and freedom of action.

The average spacing here is ten acres and you will find the individual operators are trying to use the most efficient methods to obtain oil from the formations in this state. Any wastefulness in the Salem field could largely have been controlled by the major oil companies themselves. Nearly all the operators agreed to cooperate with The Texas Company on holding down the size of the wells. Don't attack Illinoisans but vent your spleen on the major oil companies operating here who were not wise enough to handle the situation intelligently and who were too selfish in trying to grab leases in this state to remember that the landowners and farmers and business men, as well as the smaller independents, have important stakes in the fields. A cooperative spirit started in time could have been developed and may yet be developed. It can only be done by a change in attitude on the part of the major concerns. They have totally misunderstood the psychology of these people. It is inspiring to me to find a group of people who are still independent and free and who are aware of the facts and are not willing to sacrifice their rights unless it can be clearly shown that by so doing the state as well as the nation receives real benefit.

Criticism of this state from Texas which produces four times as much oil as Illinois is not seemly. The crocodile tears shed over the ills of

[*Continued on first column, next page*]

Reply . . .

Hager, is your own. You will not find it in a single sentence of the editorial, which causes me to inquire if in the innermost recesses of your mind there isn't some slight indictment of "selfishness" as one of the causes back of opposition to a *conservation* law.

It is true that Illinois offered many inducements. Shallow drilling, and low-cost operation, to quote your own words, were to be found in Illinois. Does an operator there need, in addition, to be allowed to drill his wells and to produce them with disregard of conservation measures, found advisable from a standpoint of good operating practice in other states? The answer is to be found in the fact that a large portion of the operators in Illinois are in favor of conservation laws, not opposed to them as you intimate. They want such laws for their own protection against the operator who will not follow sound practices, and they want them in order that the good name which the oil industry has been endeavoring to establish in the public mind, will not be adversely affected.

And as for the last sentence in your first paragraph, it will do Illinois little good to develop a group of "home producers" (you said in a previous sentence in the same paragraph that most of Illinois operators had come to the state from outside) if the conduct of the oil business in Illinois is such as to leave the fields and oil towns as "ghost fields" and "ghost towns" long before the time they should pass off the scene.

You say, I quote from your own words, "Naturally we are selfish in this state in wanting to keep free of oil control when there is no need for it," and then indicate that there has been a need for it in your words immediately following when you say (I quote again from your letter): "We can even grant some waste in producing oil in the state in the past."

From this and the remainder of the paragraph I assume that you hold to the opinion that all of the waste is in the past and incurable now, so why do anything about it? To assume such a position, Mr. Hager, is to assume that the period of discoveries in Illinois is past—that Illinois will never find anything worth saving in the future. You may find some who will agree with that thought, but scout reports show that many operators still have confidence that additional fields will be found in Illinois because as this is written there is a lot of wildcatting going on there.

You say that it is debatable whether or not production control (a nicer word than "proration", I'll grant you, but meaning the same thing) would have produced more oil in Illinois from the "erratic sands" there, than has or will be produced from them. In this you do grant that the matter is debatable, something which some opponents of conservation in Illinois have not been inclined to grant.

But how about Salem? We are told by operators in that field that had it been conducted under sound conservation laws, the ultimate recovery of crude oil from that field would have been millions of barrels more than will now be the case. We believe that these operators know what they are talking about because they have a wealth of information

[*Continued on next page*]

Hager . . .

Illinois should far better be shed over the inefficiency that has taken place, and is taking place, in Texas. I think any fair-minded group of engineers who know Illinois and know Texas and who know what is going on here in the way of development would agree that Illinois without oil regulatory measures is doing a good job of producing oil. Illinois operators have had lessons to learn and they are putting in practice most of those lessons. Texas too has its problems and is trying to solve them.

I venture to state that if the subject of federal control was out of the picture there would be no complaints about Illinois from outside sources; unless, indeed, oil production in Illinois rises to such a point that it again menaces Texas' markets. It may do so, and then we will no doubt hear roars of disapprobation again poured on this state.

I know that you are fair-minded and if you really knew the conditions here you would quite agree with my analysis of the situation. There are always two sides to any question and I want you to see the other side.

Sincerely yours,

DORSEY HAGER

Reply . . .

and experience to back up that statement. And it must be obvious to you, as an oil man, Mr. Hager, that efficient operation of the Salem pool to develop the greatest ultimate recovery, involving cycling of the entire field from its inception, could not possibly have taken place with some operators refusing to co-operate. As a result there has been not only waste caused by entrapment of oil, but there has been a tremendous gas waste. No one could afford to lay plans to purchase and pipe the gas with the field being produced in the manner it was produced.

And is it possible, Mr. Hager, that you do not credit the Illinois legislature with sufficient intellect, when you assume that a conservation law cannot be written by its members which will take advantage of the experiences and mistakes made in other states when such conservation and production control laws were in embryonic stage?

I am not sure just how long you have been absent from states which operate under conservation laws involving production control as a part of them, but you can be assured that the independents of Texas, Oklahoma and Kansas will not agree that they take dictation from major companies. If there is a more audible group than the independents in those areas, I challenge you to find it—and the independent associations in those states which have such laws as you object to have gone on record time and time again favoring the laws they have. In fact the independents have originated a very large percentage of them. No, Mr. Hager, I am afraid that you cannot raise the cry of independent against major in this issue. It is one of the few issues in which they stand pretty closely aligned.

As to your suggestion that independents have been bereft of their opportunities in states which have conservation laws, here are some figures which are illuminating. In 1940 there were 262 new fields discovered in states having conservation statutes, and independent operators were responsible for the discovery of 196 of them, or 74.8 percent. In Illinois, 30 new fields were discovered of which 22 or 73.7 percent were found by independents. Where is the margin of advantage claimed for independents in Illinois?

It is true that there is some difference of opinion among engineers regarding the efficiency of various methods—but it is not compatible with the facts that sound engineering principles are in conflict with the rights of the public or the operators.

You should not forget, too, that improved engineering has contributed to vast discoveries and developments within the oil industry, and that much of the hope of future reserves depends upon the still further application of sound engineering principles to the oil industry. Surely Illinois does not want, nor does any considerable portion of the oil people of Illinois want to throw into the discard improvements which sound engineering has contributed to the oil industry. A sane conservation law should be based upon a recognition of engineering principles, and an opposition to such sound principles if persisted in, could only result in Illinois being relegated to the ranks of those states—if there are any left—where the old rule-of-thumb substitutes for engineering, and the law of the jungle substitutes for inter-company friendly relations.

Getting down to your sixth paragraph, surely, Mr. Hager, you do not mean to say that it would have been possible for one operator to operate his properties at Salem with an eye to strict conservation principles when an offset operator refused to abide by such principles. You have seen too much of oil industry operation even to suggest that! And don't suggest that the "grabbing" of leases, by which we assume you mean buying them, is confined to any company or any group of companies. Any concern which gets a lease the other man wanted could, under your premise, be accused of "grabbing," in which event you and tens of thousands of other honest operators have been guilty of the practice you impugn as improper.

Your indictment that a person is unmanly because he lives in a state which produces four times the amount of oil that Illinois produces, and then criticises Illinois, is a bit surprising. My comments, Mr. Hager, are directed to a lack of conservation laws and at those who oppose such laws blindly. If you are included in that group it is because, in your letter, you do not say one thing in favor of conservation or a conservation law.

Texas requires no defense, Mr. Hager, but I find it interesting that you should even make a comparison between the production of the two states. It is difficult to discern your reasons unless you think that Texas should cut her production down below that of Illinois before a publisher domiciled in Texas, but interested in conservation, interested in the industry as a whole, can raise his voice in friendly suggestion. In case you are not acquainted with the facts, Mr. Hager, the proven reserves in Texas amount to better than 55 percent of the nation's total. The proven reserves in Illinois, of the same date when Texas reserves totalled 55.8

percent, amounted to 1.7 percent. Naturally there would be *some* difference in production!

Nobody denies that Illinois is doing a good job of producing oil—if getting it out of the ground in the quickest time is a good job—but during the past few years, a new idea has come into the oil business—that of getting the *greatest possible amount of oil out of the reservoir*—not simply the idea of a race to see who can get the most oil out of a well in a given time. There is a lot of difference, as you well know, between the two ideas. One means a greater ultimate recovery—and the oil industry has accepted the principle that the public has a stake in seeing to it that every possible barrel of oil be taken from a reservoir. Both you and I know that at this time we are able to take from the reservoir but a part of the oil which is trapped within it—and I know, Mr. Hager, that production under sound conservation rules will get a much greater percentage of the oil from the reservoir than could be obtained with the method you advocate.

I think that you are right when you say that the threat of federal control has excited operators in other states over what Illinois may do or may not do. It has had a lot to do with Illinois thinking, too, and I suspect that it has had a lot to do with yours. I suspect that you would favor state control, as opposed to federal control, although you do not so state in your letter.

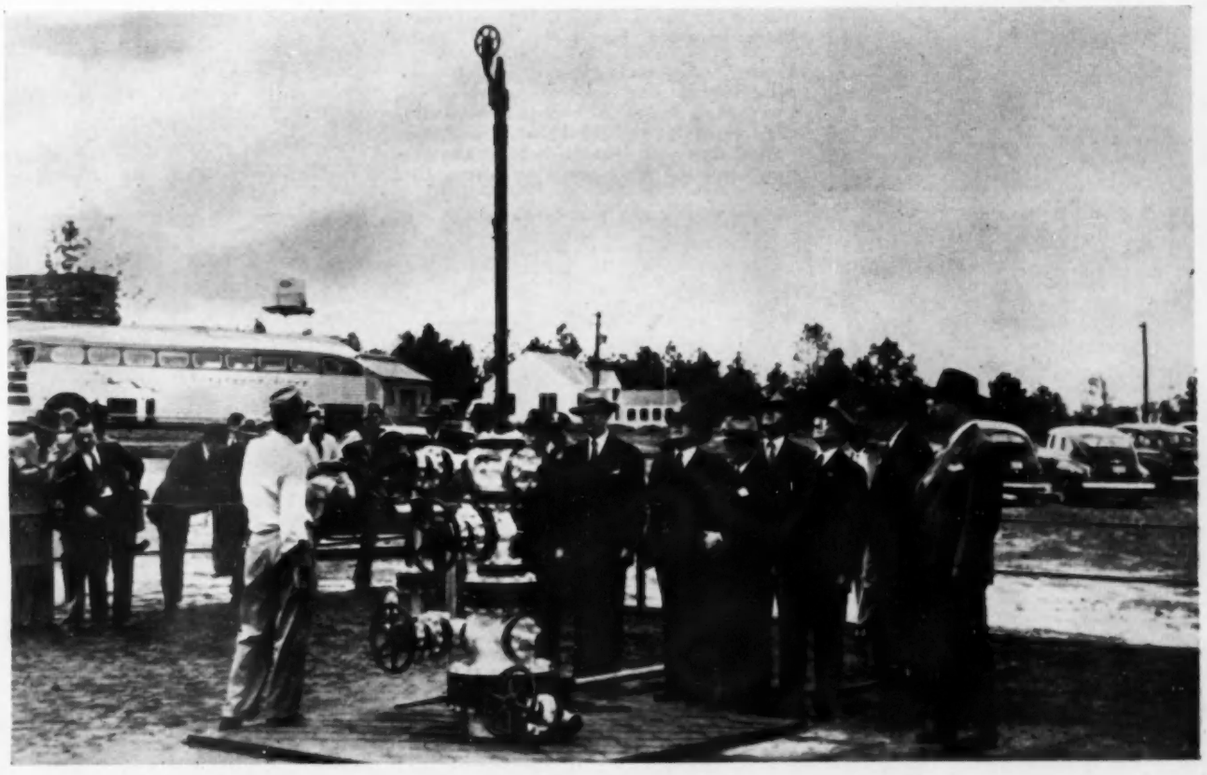
The threat of federal control, at least from legislative action, may be over temporarily, but it will not be for long. Illinois holds the key, not only to her own oil future, but to that of the United States. Surely, it is not unfair for operators in states which have been members in fact as well as in name, to suggest that Illinois back up her membership in the Interstate Oil Compact with a conservation law which will remove a great part of the criticism that there is within the oil industry groups which oppose conservation under any guise.

I have read your letter and reread it several times. I appreciate your frankness in laying your side of the picture down in writing—as we did ours in the editorial of April 21. You hit from the shoulder. So have I.

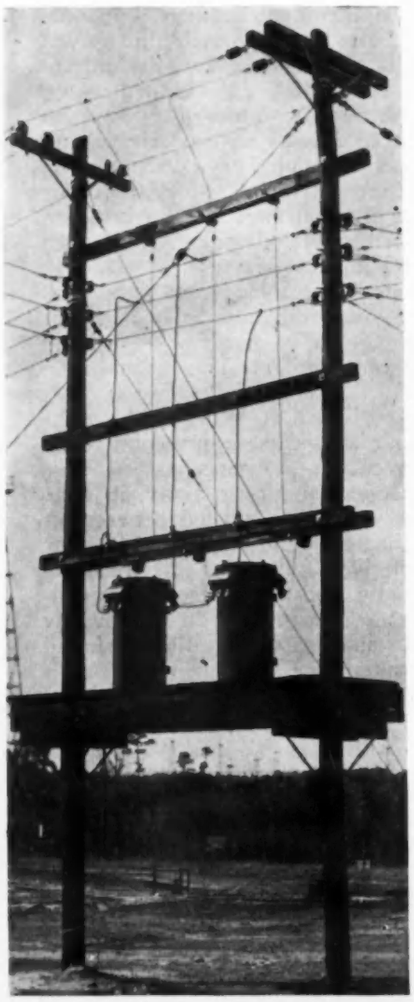
But lest readers of THE OIL WEEKLY draw the conclusion that your views are representative of that of a large percentage or even a material percentage of Illinois operators, I must say, in spite of the friendliness which has existed between us for many years, that I do not believe that your views are representative of those of any considerable group in the state, and that, presented as definitely as you presented them, they do not, by any means, constitute a sound reason why Illinois should not enact a conservation law.

Sincerely,

RAY L. DUDLEY, *Publisher, The Oil Weekly*



The Cole subcommittee of the House Interstate & Foreign Commerce Committee watch descent of a bottom-hole pressure bomb in the Magnolia field of Arkansas during the group's recent Southwest inspection tour. Surrounding the well, from left to right, are J. B. Holt, petroleum engineer for the Arkansas Oil & Gas Commission; E. J. Layton, committee clerk; Richard M. Simpson, Pehr G. Holmes and Edward A. Kelly, members of the committee; O. C. Bailey, chairman of the Arkansas Oil and Gas Commission; Charles A. Wolverton, committee member; Ed Swanson, Federal Petroleum Conservation Division, and Alec Crowell, petroleum engineer for the Arkansas state commission.



Electric Power

Pumping Plant Designed For Present and Future

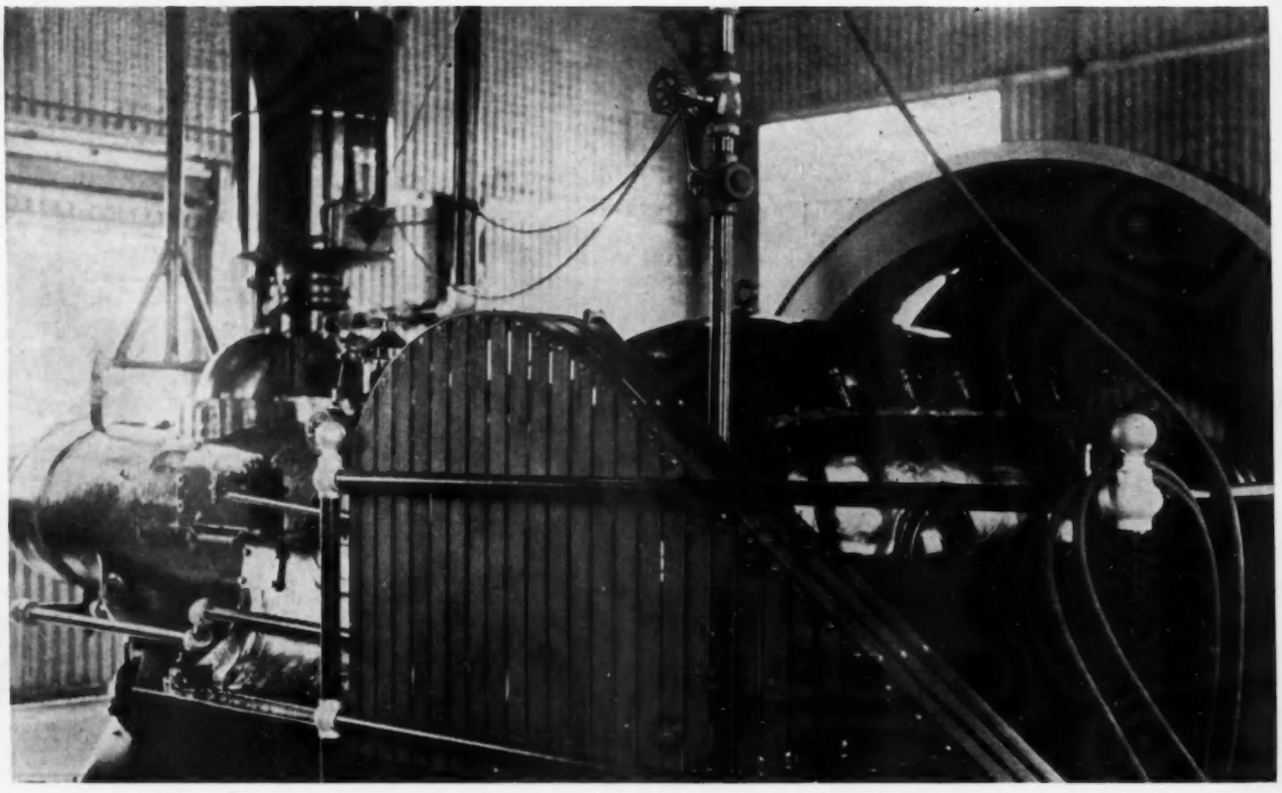
By GORDON B. NICHOLSON, Staff Writer

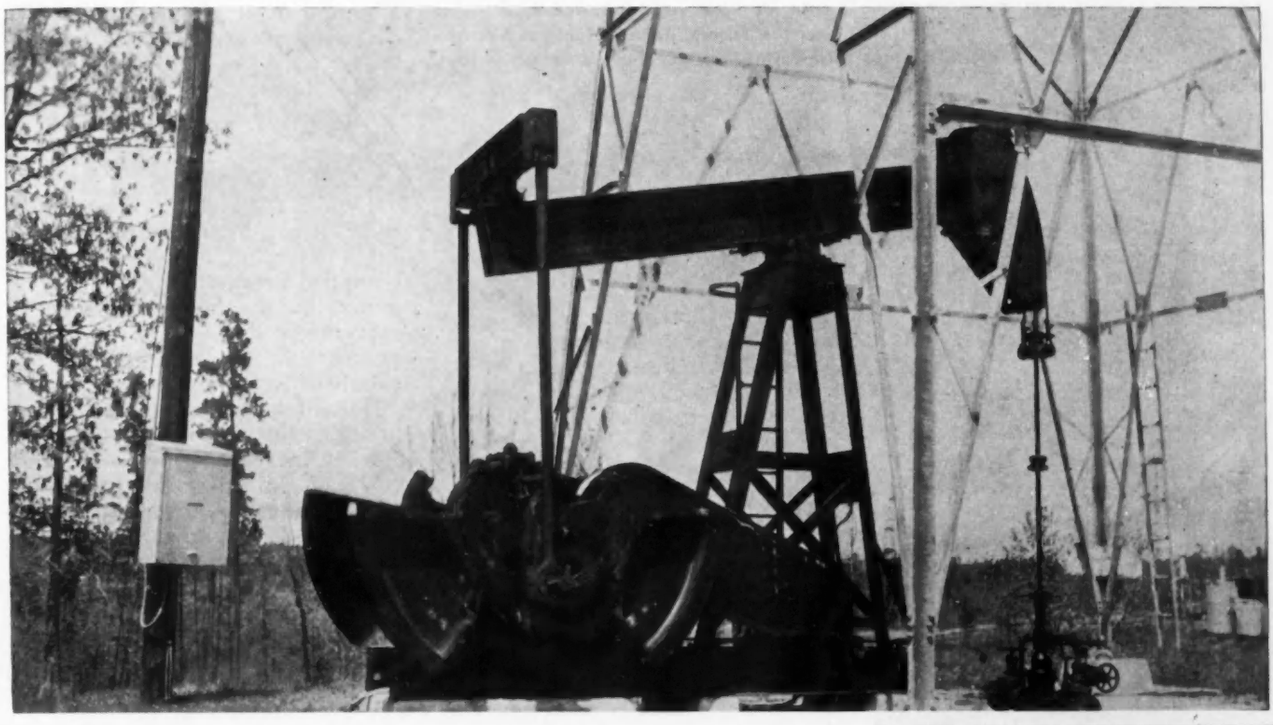
HIGH pumping efficiency embodying low maintenance costs is the objective of General American Oil Company engineers in the operation of the company's adjacent A. J. Sanders and O. M. Victory leases in the East Texas field. To what extent that goal has been realized is illustrated by the performance of the electric-power assembly that is proving satisfactory for the conditions on the leases. While equipped to cope with increased power demands in the future, the use of low-horse-power motors gives gratifying effectiveness to the current pumping conditions and keeps power demand at a minimum.

A wide diversity of well characteristics is a peculiarity of many wells producing in the East Texas field. All producing from the Woodbine sand and apparently completed similarly, many wells bear only the slightest resemblance to their neighbors. Productivity varies sharply; and in the pumping wells, fluid levels and water content are widely divergent. General American Oil Company's Sanders and Victory leases are no exception, and, as the wells approached the pumping stage, the selection of the most adequate power for their operation became a major problem. With 60 wells on the leases, an in-

Transformer bank (left) containing two 50-kva. units which reduce a 2400-volt transmission current to the 440 volts required for the motors. This transformer bank supplies for seven well units.

Power equipment (below) which supplies current for General American Oil Company's leases. Shown is a two-cylinder horizontal gas engine with its 8,000-pound flywheel. Hidden behind wheel is the electric generator, or alternator.





An electrically-driven unit typical of those in use by General American Oil Company on its East Texas leases. The control box is on pole at extreme left.

efficient pumping assembly would result in considerable waste expenditure in equipment and manpower.

An electric-generating power plant with individual electrically controlled units at the wells was selected as the power. This type installation offers considerable flexibility in operation. Constructed with the idea that future power requirements may be greater than those at present, the assembly will permit expansion at low cost when such occasion arises.

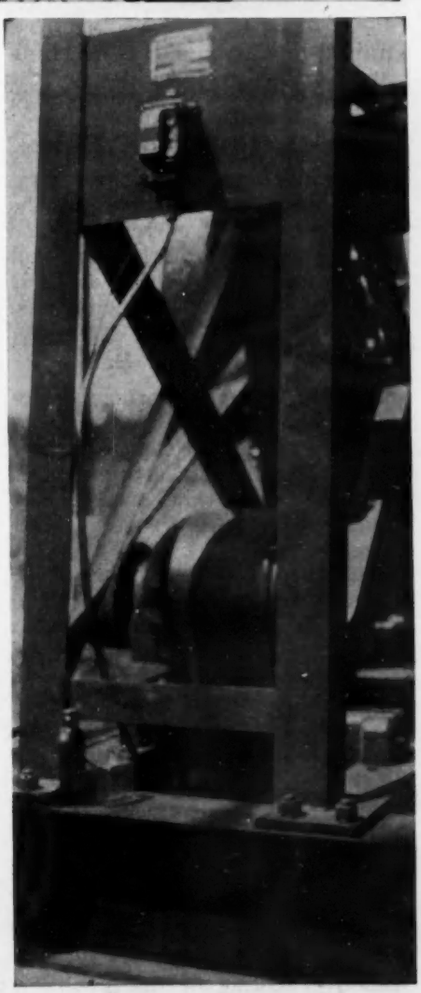
Central Site

A centrally located site was selected in order to be easily accessible to both leases, for the compactly arranged generating plant. The building is galvanized iron with concrete floors on which the power machinery is set. The prime mover is a two-cylinder, horizontal, two-cycle gas engine, 14-inch bore and 18-inch stroke, rated at 185 horse power at 300 r.p.m. Directly connected to the engine is the alternator, or generator, which has a 187-kva. rating and a .7 power factor and 2400-volt capacity; it is 3-phase and 60 cycle. An 85-inch flywheel weighing 8000 pounds tends to stabilize the power developed by means of the kinetic energy stored within it. A 10-kilowatt, 125-volt exciter is belt-driven at 1750 r.p.m., serving the alternator.

Mounted on a switch gear are various meters which indicate voltage, amperage, and kilowatts produced. A totalizing meter records the exact amount of electricity used daily by the operating well units.

So efficient and dependable has this power plant been in its operation that it has been found unnecessary to install a "stand-by" engine or carry extra parts for the plant in case of equipment failure. With the exception of the alternator, parts are replaced easily and require only a brief shut down of power. In the case of a serious failure, plans already have been made to connect quickly with a commercial power line which crosses the lease. A direct connection from the line to one of the transformer banks on the lease will reduce the voltage to 2400, allowing operations to proceed as normal.

The electricity produced in the power plant leaves the building by means of a single underground cable to reach the first wooden pole located a short distance away. From this point wires are strung between poles, skillfully arranged so as to distribute the lines and systematically cover the leases. As evidence of the carefully engineered plans for the installation, particular stress is placed on the



The on-off operating switch is shoulder high on the Sampson post. Underneath are electric motor and connecting belt.

Interior view of a control box, showing the fuses, thermo elements and the lightning arrester for motor protection.

straight-line arrangement to eliminate unnecessary guying for the poles. Branches in the lines at designated places serve to make connection with one of the five transformer banks located at strategic points in order to supply the proper amount of current to each well. A reduction of the 2400-volt load to the required 440 volts is effected by the transformer banks.

Four Transformer Banks

Four of the transformer banks each contain two 50-kva. transformers and a total capacity of 87 kvas.; these are connected on "open delta" so that a third transformer may be added to boost its full capacity to 150 kva. The fifth transformer bank already has three 50-kva. transformers and operates at its maximum capacity. The average 87-kva. transformer bank supplies power to 7 wells; the 150-kva., to 10 wells. Automatic cut-offs regulate the operation of the banks; relays and lightning arresters prevent damage due to short circuits or lightning.

The reduced current of 440 volts is transmitted directly from the transformer banks to control boxes conveniently near the wells. These boxes are equipped with various measures to safeguard the motors from overloading or undervoltage in the lines, having thermo elements, fuses, and lightning arresters for that purpose.

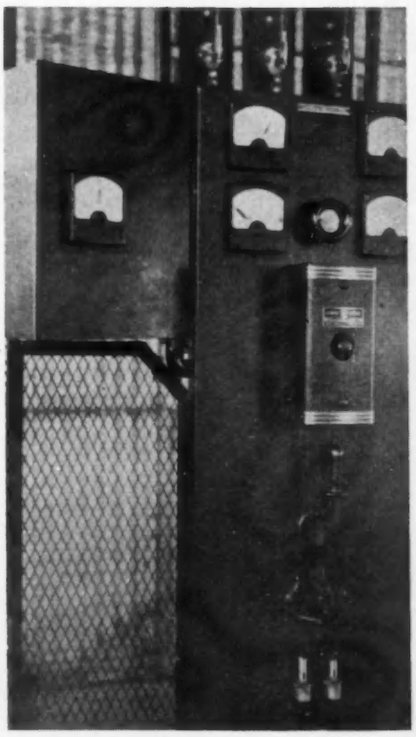
Of particular pride to the operators is the arrangement of the "on-off" switches for operating the motors. Placed shoulder high on the Sampson posts, the switches are readily accessible to workers at the well heads, and offer unusual convenience in the repair of stuffing boxes or for polish-rod adjustments. The motors are set behind the Sampson posts, and give compactness to the pump unit assembly. The motor is connected by belt to pulleys on the unit, the size of the pulley determining the speed of the pumping stroke. By the simple removal of three bolts, the pulleys are removed and replaced by pulleys of another size in order to change speed.

Power Load Low

All equipment at the wells is adapted for changes so that a maximum average of 20-horsepower per well may be maintained. However, present power requirements are relatively low as the wells are pumped usually at 2200 feet, although the holes average 3600 to 3700 feet. The usual speed of 16 to 20 strokes per minute with a length of 34 inches requires only 4 to 6 horsepower. Operating in this manner, in order to keep power consumption at a minimum, low-horsepower motors are used, as the power demanded by a large motor is eliminated. Larger motors will replace the present ones as the load requirements increase. As a further safeguard to eliminate needless power consumption, company engineers place particular emphasis on their practice of maintaining proper balance in the pumping equipment. All wells are frequently checked with an ammeter which quickly indicates improper balance and enables speedy correction of that condition.

Pumping 36 Wells

Of the 60 wells on the Sanders and Victory leases, many are flowing, only 36 wells now being equipped for pumping. The single generator in the power plant is carrying a daily load of only 23 percent of its full capacity, and should easily take care of any additional load it may have to carry in the future. However, the problem of increased power demands has been skillfully anticipated. The wells may easily be "staggered" in production, as allowables are low and are made in a few hours. By reducing the total number of wells pumping at a given time, the operators will be able to keep their generator requirements continually below its capacity. However, if at any time the single generator becomes insufficient for the power needed, the power plant is so designed as to facilitate the addition of a second generator. Careful foresight has made easy this expansion of plant facilities, as the plant, the distribution system and the pumping units were assembled with that possibility in mind, and are arranged to meet such a contingency with a minimum of expenditure and loss of time.



Main switch gear, showing meters for recording voltage, amperage, and number kilowatts produced by generating unit.

Dehydration Units

For Individual Gas Wells

By R. B. ANDERSON, Columbian Carbon Company

R. B. ANDERSON

ROCK pressures in excess of 1000 pounds in West Virginia have permitted the operation of field lines at pressures of 500 to 600 pounds, which have introduced the problem of hydrate formation at temperatures as high as 55° F. This paper, which was presented at the Spring Meeting of the Eastern District of the American Petroleum Institute Division of Production, in Pittsburgh, April 17-18, 1941, describes small volume, automatic natural-gas-dehydration units designed for treating natural gas at individual wells to solve this problem. The paper is published here in slightly abstracted form, a number of illustrations and tables being omitted.

R. B. Anderson, the author, graduated from Pennsylvania State College in 1922 with B.S. degree in mining geology and has been engaged in the natural gas business continuously from that time; having been located in Kentucky, Canada, Oklahoma, Ohio and now in West Virginia.

DISCOVERY in West Virginia of deeper gas production with greater rock pressure has permitted use of higher field line pressures than heretofore possible in Eastern United States, which has resulted in much saving in pipeline costs, but at the same time has introduced new problems.

Field-line pressure of 500 to 600 pounds cause hydrate formation or "freezes" at temperatures of 52° to 55° F. Ground temperature of 55° F. is attained early in the fall in West Virginia and does not rise above these temperatures until late spring. Since the gas from the well enters the line saturated with water at temperatures varying from 60° to 70° F. considerable water is precipitated in the pipe lines, and freezes are a constant source of trouble during the period when maximum efficiency is most needed.

Methods have been developed for removing the water vapor; that is, dehydrating the gas before the water vapor has condensed. This means dehydrating the gas at the well. This method has proved to be a complete, economical, satisfactory, and practical solution of the problem.

Design Limitation

A dehydration plant located at isolated wells must be designed to meet the following conditions:

(1) It must be completely automatic and require no more than casual inspection by the regular field force.
(2) It must be simple in operation so that unskilled common labor can understand its operation and make adjustments when necessary.
(3) It must obtain what power is required from gas pressure; no other is available.
(4) Water for cooling or steam is not available.
(5) The solution must not be corrosive

and must be such that if over-concentration does occur no harm will result.

(6) The method must appreciably depress the dew point so that small quantities of untreated gas can be mixed without raising the dew point of the mixed gas above the minimum ground temperature.

(7) It must be inexpensive.

Description of Well Head Dehydrator

Figure 1 illustrates a well-head dehydrator that was finally adopted to meet the above conditions. There is really nothing new in the method employed. It is the conventional diethylene glycol dehydration plant. It is unique only in various features of its design to meet the limiting factors of a well-head dehydration unit.

Gas saturated with water vapor enters the contactor through the inlet pipe above the base of the contactor and passes up through three bubble trays where it contacts the diethylene glycol solution that is flowing down through the contactor. This contact is sufficient to absorb all the water the diethylene glycol is capable of absorbing from the gas. The gas passes out of the contactor near the top and through a mist extractor that removes all entrained glycol and returns it to the bottom of the contactor. The gas leaving the mist extractor is dehydrated; it then passes through a constant differential pressure regulator. This regulator maintains whatever constant differential is required to operate a pump against the existing line pressure. For example, if the contactor side of the regulator is at 630 pounds, the downstream side of the regulator may be maintained at 600 pounds; if the contactor is 400 pounds a somewhat lower differential is required. This is one of the unique features of this particular design, and will be referred to again.

A liquid-level control is located at the base of the contactor. The solution in the bottom of the contactor is saturated or rich with water absorbed from the gas. The level control maintains this at constant level by discharging at about the same rate that the fluid enters the top of the tower.

The rich solution passes through a heat exchanger where it exchanges heat with hot solution returning from the still and then passes through the pre-heating coil submerged in hot oil in the oil vat where it is heated to a temperature of 260° F. to 265° F. It passes up to a point near the top of still onto the second tray of three trays in the still. The still is at atmospheric pressure. Upon entering the still, steam and some glycol vapors flash from the solution. These vapors pass up through the top bubble tray where some of the glycol vapors are taken back in solution. The balance then passes upward through the three 1-inch uninsulated pipes at the top of the still. The steam is cooled in passing through these 1-inch uninsulated pipes and a rain of condensed water takes place that acts as reflux to wash out the last traces of glycol from the steam. The practically pure steam passes on out to the atmosphere.

The bottom of the still is submerged also in the hot oil bath to maintain constant temperatures in the still.

The liquid level is maintained in the still by an overflow pipe through which the lean dehydrated diethylene glycol flows back through the heat exchanger to a receiving tank which is connected to the suction side of the pump. It is pumped from the receiving tank to the top of the contactor which completes the cycle.

Temperatures are maintained in the still by means of two thermostats that open or close the gas supply to the burners under the oil vat. One is located at the top of the still that cuts off the burners if the still top temperature becomes excessive. The other is located in the hot oil that maintains a constant oil-bath temperature. The oil in the vat is a 700° F. flash point oil obtainable from any refiner.

The pump is a steam type pump, but designed on the power end for natural gas at a pressure of 600 pounds. The power end is 6 inches in diameter, the solution end 5/8 inch in diameter and is double acting. Power for the pump is supplied by the dehydrated natural gas. The intake power end is connected to the high side of the constant differential regulator and exhausted to the low side of the regulator.

One unit is located at a small field compressor station. In this instance the pump is operated by taking the dehydrated gas at discharge pressure from the station

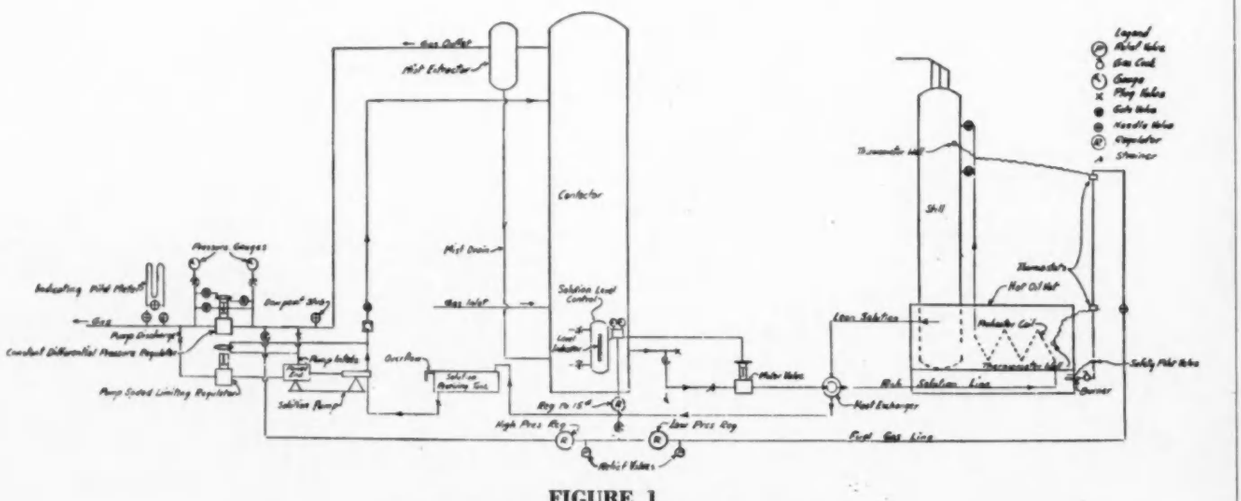


FIGURE 1
Well-head dehydration plant flow diagram

and exhausting it into the intake line to the compressor station. Constant speed is maintained by means of a steam governor that operates a throttling valve on the exhaust line.

Where power is provided across the constant differential regulator, a speed limiting device is provided on the exhaust gas line from the power end of the pump. This is also a constant differential regulator with one side of the diaphragm connected to the solution discharge line from the pump and the other side connected to the intake gas line to the power end of the pump. If an accident causes a material increase of the main differential pressure the pump speeds up; this raises the discharge solution pressure which serves to close the regulator on the exhaust gas line from the power end of the pump and prevents excess speeds.

Operating Data and Results

Contact temperatures of the gas vary in the six units in operation from 42° to 65° F. The dew points vary with the contact temperature from a minimum of 3° F. to a maximum of 15° F. Since 36° F. has been the minimum ground temperature during the last four years, these dew points are entirely satisfactory.

The following readings are typical for this type of plant:

Gas volume treated, cu. ft.	5,000,000
Gas pressure, pounds	600
Contact temperature	65° F.
Dew point	15° F.
Specific gravity, diethylene glycol	1.113 @ 68° F.
Specific gravity of the condensed water	1000 to 1002 @ 60° F.
Oil-bath temperature	290° to 322° F.
Still-top temperature	180° to 190° F.
Temperature lean solution from still to heat exchanger	262° F.
Temperature lean solution from heat exchanger	150° F.
Temperature rich solution to heat exchanger	65° F.
Temperature rich solution from heat exchanger	185° F.
Solution rate, pints per min.	1½
Carry-over, evaporation and accidental losses, gal. per million cu. ft. of gas treated	.05 to .25
Cost diethylene glycol per gallon (Approx.)	$1.30
Operating labor	Same as required for summer operation.

Six units were installed in the fall of 1940. The first unit was installed and put in operation two days after the first pipe line freeze had occurred. Since that time not one freeze has occurred, and the pipe-line efficiency during the past winter has been 100 percent at all times. The increased efficiency of the pipe lines, the fact that no interruptions of any kind have occurred and the operating labor savings experienced this year as compared to operating costs in previous years much more than pays for the entire cost of all the installations and their operating expense.

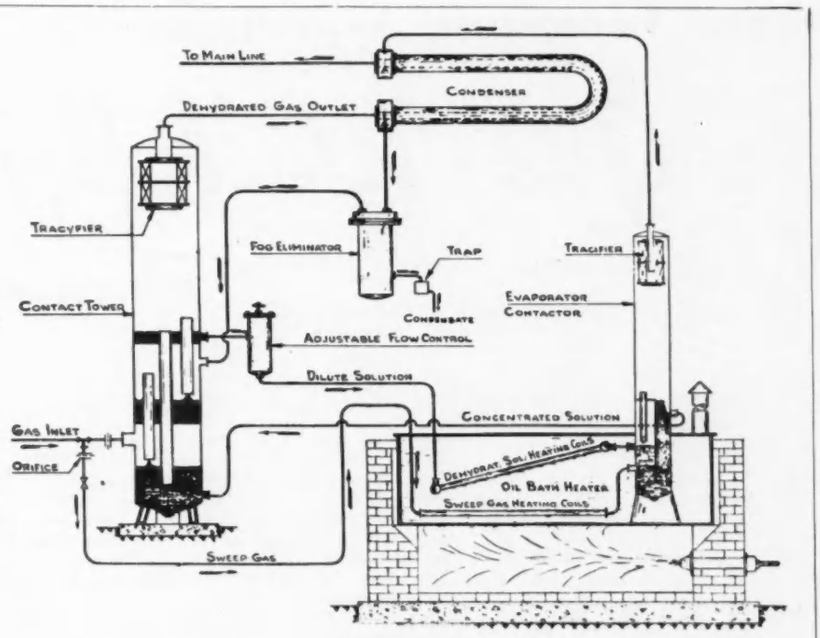


FIGURE 2
Typical gravity-flow circuit dehydration plant

Gravity-Flow Dehydration Equipment

There has been developed another type of unit that is adaptable to dehydrating gas at the well that meets all the limiting factors for such plants.

Figure 2 illustrates the operation of this unit. The unique feature of this design is that no pump is required and the still is operated at line pressure, the water removed and condensed under pressure and discharged through a trap from the unit.

Gas enters the contactor near the base where it contacts the diethylene glycol solution. The solution passes up through the trays of the tower to the top tray where it drains through an overflow line to an "adjustable flow control." The adjustable flow control is a chamber in which is located an adjustable weir which controls the volume to be discharged to the still. The solution passes to heating coils in a hot-oil bath and then to the still under full pressure.

An orifice is located in the intake gas line to the contactor that maintains a differential of about a pound or less. A small amount of gas is taken from the upstream side of this orifice through a line that passes through heating coils in the hot-oil bath and brought up to a temperature of about 200° F. to 2500° F. This hot gas is, due to its temperature, relatively dry. It is passed through the hot solution in the still and absorbs water from the diethylene glycol, dehydrating it. The sweep or strip gas in the still passes then to a condenser where it is cooled by the dehydrated gas from the contactor. The cooling of the strip gas condenses the water removed from the diethylene glycol which is trapped out of the system. The balance of the strip gas then passes on and enters the contactor below the last tray and is contacted with lean diethylene glycol, dehydrated, and passes out into the line with the other dehydrated gas.

Oil-bath temperatures are maintained by means of thermostats at about 300° to 350° F.

The dehydrated solution in the still drains through an overflow pipe by gravity back to the base of the contactor, completing the cycle.

The sweep gas required is relatively small. In a plant treating 14 million cubic feet at 500 pounds, where the contact temperature is 65° F., about 5½ cubic feet of gas per minute is used for sweep gas to dehydrate the rich diethylene glycol.

Quite a few of the gravity flow plants have been installed and are being operated successfully.

Some Economic Aspects of

Gas-Well Spacing

Based on Elk-Poca Field

By W. P. SMITH
Godfrey L. Cabot, Inc.

Too frequently the objective of an immediate large volume of production has completely overshadowed the consideration of the ultimate economic aspect of a development program, sometimes resulting in capital losses for some in the midst of other profitable enterprises. The industry will find it of great general benefit to conserve and prolong the useful life of producing wells through adequate and economically sound spacing of wells.

Thus does the author express his views on well spacing. While his remarks relate to the Elk-Poca gas field, similar conditions are to be found in many oil and gas areas of the United States. He shows that well spacing is a means of correcting the economic relationship between operating costs and possible revenue returns. For this reason, proper spacing of wells is a question of importance to every operator.

This paper was presented at Spring Meeting of the Eastern District of the American Petroleum Institute Division of Production, in Pittsburgh, April 17-18, 1941.

The Author

"LET the Devil take the hindmost."

Whether we like it or not, the economic policy expressed by that statement has brought about many, if not most, of the headaches suffered by oil and gas producers. Some of the most obvious of these are: over production, increased unit costs, and accelerated depletion. When the rate of development of new production exceeds the demands of our market and of our requirements for safe reserves, then we have overproduction. When two wells are drilled in an area, which could be adequately drained by one, unit cost of production is increased. Similarly, the rate of depletion of the producing area is disproportionately increased, and not only current investments are devalued, but prior basically sound investments as well.

Although there have been some few notable exceptions, in general up to the present, the development of the Elk-Poca field, near Charleston, West Virginia, has been on a rational basis, and is on the whole economically sound. However, caution will have to be used henceforth in order to avoid some of the costly uneconomic results of poorly planned well spacing.

I have no fixed ideas relative to the economic problems which are to be considered in attempting to find a satisfactory answer to the well-spacing problem in general. It is notable, however, that often the subject is not given the careful study which its importance deserves. I do not believe that there is any general formula which can be made to fit all cases. Each company or operator should for his own, as well as for the common welfare, seek to follow a program of well spacing which will, so far as is predictable, serve his needs, and at the same time conflict as little as possible with the development program of his neighbor. In other words, unnecessary overcrowding of offset wells should be avoided. It is not recommended that any operator or group set up a fixed and inflexible well-spacing program, because, obviously, each one has problems as to acreage, location of acreage, market demand, and reserves which are peculiar to his own operation.

It is recommended that careful study be given all available field and production data, to the end that each operator may estimate for himself the economic factors relating to his own part in the development of new sources of production. We should not grieve too much over past mistakes, nor be too well satisfied with ourselves as to past successes, but let us use all the experience we can avail ourselves of to assist us in guiding our operations in the future. All too frequently the objective of an immediate large volume of production has completely overshadowed the consideration of the ultimate economic aspect of a development program, sometimes resulting in capital losses for some in the midst of other profitable enterprises.

The commercially productive limit of the combined Elk-Poca area has not been established. Within the developed portion of the field are about 68,000 acres. At December 31, 1940, the number of completed wells was 417. Assuming an average cost, estimated at $27,000 per well, this number represents a capital investment of $11,259,000 in wells alone; to say nothing of the miles of pipe line which has been laid, the compressing stations, desulphurization plants, and field organization in general which has to accompany such a development. It will be seen that up to December 31, 1940, the development has taken place at an over-all average rate of 1 well to each 163 acres in that part of the

field called "the developed portion." This acreage was determined by scaling a 1320-foot scale map with a planimeter.

The 163 acres per well is the over-all average up to December, last, and does not necessarily indicate by any means the extent to which the so-called proven territory may be drilled ultimately. In the Grapevine area, which was the first portion of the field to be drilled extensively, the average now is down to 70 acres per well within an area of 1475 acres in the southeast part of the most thickly developed portion of the field. In the Sissonville area as a whole, the average now is about 90 acres per well in an area containing 8940 acres and including the Grapevine section just mentioned. Ninety acres is approximately equivalent to a spacing of 2000 feet between wells. In this particular section, which is an area of rather loose sand, it is notable that the ultimate recovery may be between three and four times the average recovery per well or per acre for the entire field. The original open flow of wells in this area was between 10 and 22 million feet daily —averaging, perhaps, 15 million.

Ultimate Recovery

From the Elk-Poca field, as now defined, it is estimated that the ultimate recovery will be about 380 billion cubic feet of gas. As of December 31, 1940, there had been produced approximately 217 billion cubic feet, or slightly better than 520 million cubic feet per well then completed. The initial, or virgin, rock pressure in the Elk-Poca field was about 1900 pounds. Some of the wells first drilled showed pressures higher and a few lower than that figure. The average rock pressure, weighted on the basis of acreage in 200-pound contours, at last December 31, is estimated at 840 pounds.

Based on the foregoing estimate of the field's ultimate capacity to produce and 460 wells, which allows for completion of the wells drilling or located at the year's end, the average ultimate recovery may be assumed to be 826 million cubic feet per well over-all; or at a rate of about 5,600,000 cubic feet per acre. When 460 wells are completed the over-all average spacing will be less than 148 acres per well. Since the ultimate recovery from the defined 68,000 acres is estimated to be 380 billion, of which amount 217 billion has been produced, there remains 163 billion cubic feet still to be produced from the 460 wells.

Income

Assuming an average gross price of 12 cents per thousand at the well, less 1½ cents per thousand for the farmer's royalty, and less 7.8 percent production tax, the producer's income from the sale of gas—out of which he must pay for his well and meet all other taxes and operating expenses before realizing his profit—is 10.142 cents per thousand cubic feet. If the average cost per well is $27,000, it will be seen that the operator must produce 266 million cubic feet to recover his investment. At the rate of 148 acres per well—the new over-all average for 460 wells—the prospective recovery per new well is 355 million cubic feet. This gives the operator an average of 89 million cubic feet per new well estimated recovery out of which he is to pay operating expenses, additional taxes, and take his profit. It is to be remembered that these figures represent an estimate for the average of the wells to be completed.

The foregoing comment illustrates why, from an economic standpoint, it is impractical, in my opinion, to recommend any fixed schedule of well spacing. The problem is continuously variable, depending upon the individual operator's seasonal market volume and his price, as well as the extent of depletion in the particular area in which his well is situated. The matter of total acreage tributary to any well or group of wells, in other words drainage distance, is extremely controversial. I have therefore not included comment on this question since there seems to me little to be gained by doing so. In the original Grapevine area, as previously mentioned, the spacing now is at the rate of 70 acres per well. Probably the recovery of gas from the area would have been ultimately as great with fewer wells, and with consequently better economic results, although on the whole the average well in the entire Elk-Poca field completed to date, has been profitable; the relatively few unprofitable wells happily being more than compensated by a remarkably high percent of good producers.

On the whole, my own company's policy as to the spacing of wells seems to have been highly satisfactory from an economic standpoint up to the present. There have been exceptions, of course, where circumstances made changes from our usual policy necessary. In general, and whenever circumstances permitted, our wells have been spaced at 2000 feet, giving an average of 92 acres per well tributary to each.

Well Averages

As of the end of last December, my company's wells had produced at a rate of recovery per well estimated to be 65 percent above the over-all average in the field. I do not mean to say that well spacing according to our program is responsible for this large increase in our own production over the general average. We have been fortunate in having acreage located in that portion of the field which has been highly productive. However, I think the spacing program which we have adopted prior to this time is due a considerable amount of credit for that high average recovery. In considering tentative plans for advance locations to be developed during the summer of 1941 in what is expected to be an area of fairly tight sand, it is contemplated that average spacing may be extended to 3000 feet, giving about 206 acres per well. This spacing is not finally decided upon at this time; however, it is being given consideration. With such spacing, the wells, if all are productive, should theoretically recover about 494 million cubic feet each. This estimate is based upon the assumption that the producing limits of the field are now defined. This is not necessarily correct, but is a safe basis from which to draw conclusions relative to the spacing of additional wells to be drilled. One of the most obvious needs of the operators in the development of new deep producing structures, is for unitization of small, contiguous acreage groups wherever possible into sufficiently large blocks to avoid unnecessary and uneconomic over-drilling due to requirements for offset wells.

It is my belief that the industry will find it ultimately of great general benefit to undertake a program of education for the royalty owners and of self education for the industry, to conserve and prolong the useful life of producing fields through adequate and economically sound spacing of wells, bearing in mind that what may be sound economics for one company or one operator may not necessarily be so for another.

FIGURE 1—Setting up the signal generator

Locating Pipe-Line Depth Without Injuring Coating

By W. L. DUCKER, JR.
Product Engineering Co.
Tulsa, Oklahoma

WITH the advancements that have been made in recent years in the field of corrosion control on pipe lines, it is becoming a generally accepted fact that the cost of coating the longer and more permanent lines is an investment well justified by the savings effected in future maintenance of the line. The coating on the line however, is effective only so long as it remains an unbroken electrically insulating layer interposed between the steel of the pipe and the voltage potentials existing in the soil through which the pipe line runs. For this reason, and considering the magnitude of the investment represented by the coating, it is imperative that once layed, the line be allowed to remain in place undisturbed, for any physical contact with the line will in all probability puncture the coating and thereby produce a point of localized corrosion.

This progress in the method of pipe line construction has necessitated changes in the methods of working on the pipe line after it is in place. For example, if for any reason the line is uncovered, whether or not the pipe itself is disturbed, that portion of the line that is exposed must be examined for breaks in the coating, and these repaired, or the full exposed length of the line should be recoated as a precaution against punctures.

An unusual case of a coated pipe line necessitating a change in operating technique occurred recently when it became necessary for one of the major pipe-line companies to check the depth on approximately 100 miles of new 12-inch oil line located in Northeastern Missouri. In the days of uncoated lines, this would have been a relatively simple problem easily solved by prodding the line at regular intervals with usual pipe prod or spear and thus measuring the depth directly. However the coating on this line consisted of a cold asphalt primer coat, 5/32-inch of asphalt applied hot and wrapped with 15-pound asphalt saturated asbestos felt, and this procedure would have punctured the coating at intervals for the full length of the survey and would have consequently rendered relatively ineffective the coating; in this case an investment of about $130,000.

The problem then consisted of devising a means whereby the depth of a pipe line could be determined to a degree of accuracy approaching the accuracy of the direct prod readings; wherewith the line itself would not be contacted, or the number of such contacts would be minimized; the necessary equipment to effect such readings would be easily portable; and the process or technique be such as to permit rapid progress with the work.

To meet these requirements, and especially to attain the required degree of accuracy, represented a very real problem. In the design of the equipment it was decided to utilize the basic principle of an alternating current signal impressed upon the line and to obtain the location (depth) of the line by exploring the contour of the A. C. field set up about the line by the signal current. This being the same type signal em-

ployed by the ordinary pipe line locator or "radio" in common use for tracing the route of buried lines.

The apparatus as designed for this work consisted of a conventional pipe line "radio" signal generator, Figure 1. However, the conventional method of impressing the signal on the line by contacting the line with a spear and connecting the signal generator between that spear and a distant ground spear was found to be impractical in this precision work due to the heavy signal concentration at the input point which made it impossible to obtain accurate reading within a range of 600 to a 1000 feet on either side of the input point, and due to the relative short distance the signal would carry along the line from that point.

To overcome these difficulties and particularly to drive the signal a maximum distance along the line, special contact and ground equipment was devised, the use of which permitted making accurate depth readings at the first stations (200 feet) on either side adjacent to the input point. At the same time the signal range along the pipe was greatly increased, reducing to a minimum the number of points at which it was necessary to puncture the line coating.

The receiver, as shown in Figure 2, consisted of a single unit with self-contained batteries, amplifiers, pick-up antennae loop and equipped with a sensitive level. The only external connections to the receiver being to the head phones which in this case were of the helmet type to avoid wind noises under the phones. Precision work of this nature further requires that the receiver loop be "electrically symmetrical" about its own geometrical axes in order that the exploratory process might be correctly and reliably interpreted. That is to say that the field of the loop must be undistorted, for otherwise the receiver would give varying results, depending on which way it happened to be rotated in the plane of the loop.

The auxiliary equipment consisted of a stake equipped with a large flange or plate as shown in Figures 2 and 3 so arranged that when driven into the ground, the flange would contact and establish the mean ground level at the point where the reading was to be taken. In the upper end of this stake was a notch to carry the exploring bar, and an index point opposite which was read depth on the bar scale.

The exploring bar, Figure 3, consisted of a hardwood beam equipped with crossed level bubbles at the bracket end and a bracket to hold the receiver at a fixed angle to the horizontal, as established by the attached levels. Along the top of the beam was a scale from which direct depth measurements in feet and tenths were read. The operation of this equipment is based on the principle that a single turn inductive loop, when placed in an alternating magnetic field, has zero coupling (picks up no signal) when the plane of the loop is exactly tangent to the curvature of the field. A receiver designed especially for this type operation can be made to be quite sensitive in this regard and will consequently give extremely accurate results.

The operation of the equipment consists of first impressing the A. C. signal on the line by the use of the contactor and signal generator as shown in Figure 1. This operation does necessarily puncture the line coating and for that reason, whenever it was possible, advantage was taken of road crossing vent pipes, block gates or any other connections as a means of connecting the signal generator to the line. By the use of such connection and due to the great signal range obtained by the special contactors employed, the number of points where it was necessary to puncture the coating were relatively few over the entire 100 miles.

The first step in making a depth reading is to accurately spot a point precisely over the center of the line. This is done (Figure 2) by holding the receiver in a horizontal position by use of the sensitive level, and moving the receiver across the line until a point is reached where the signal sharply cuts off. At this point the plane of the loop is exactly tangent to the curvature of the signal field, and since the loop is held precisely horizontal, the center of the field (the pipe) is at some point vertically below the electrical center of the loop. When this is located the flanged stake is set directly over the point. (Figures 2 and 3.)

To determine the depth of the line the receiver is placed on the bracket of the exploring bar which holds the receiver at a fixed angle

FIGURE 2

Spotting center of pipe and setting flanged stake for testing.

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- *25 to 900 Horsepower Range*
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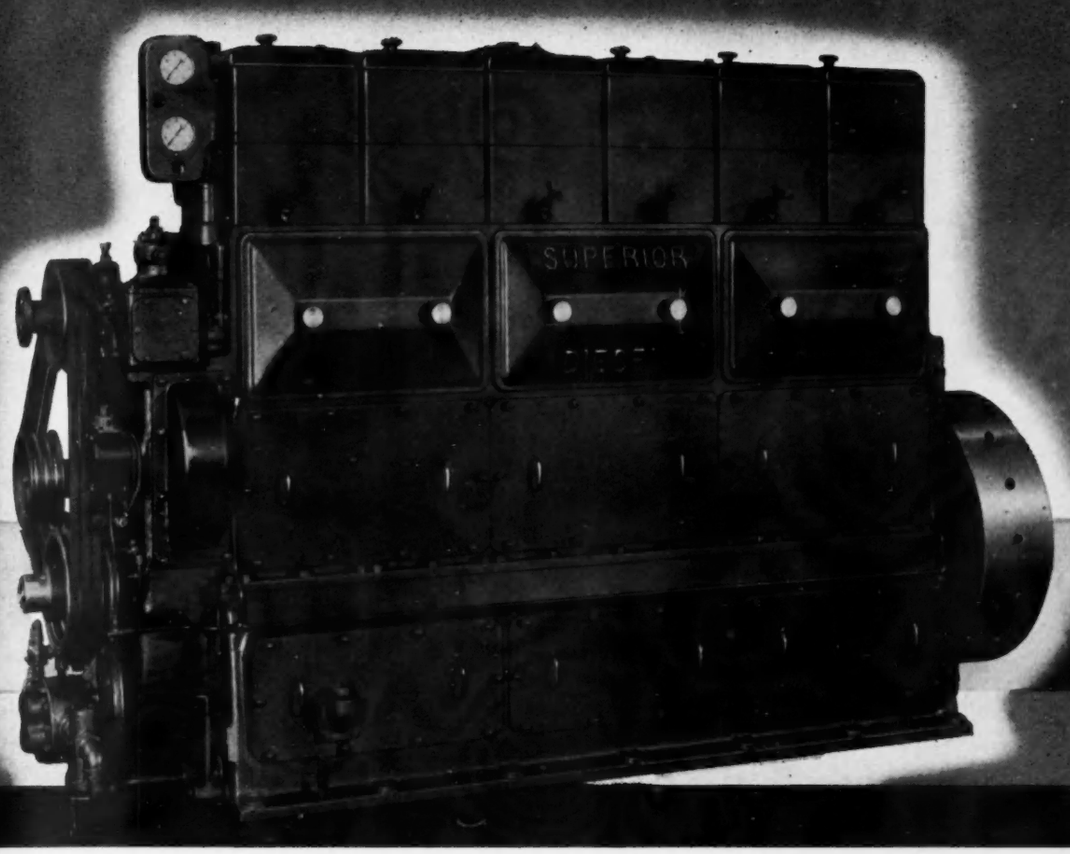

The Type PTD Convertible Diesel here illustrated furnishes dependable, economical power for heavy rotary rigs, for driving centrifugal pipe line pumps through speed increasers, and for direct connected generator service.

6 or 8 cylinders, 8½" bore x 10½" stroke. Speeds up to 900 r. p. m.

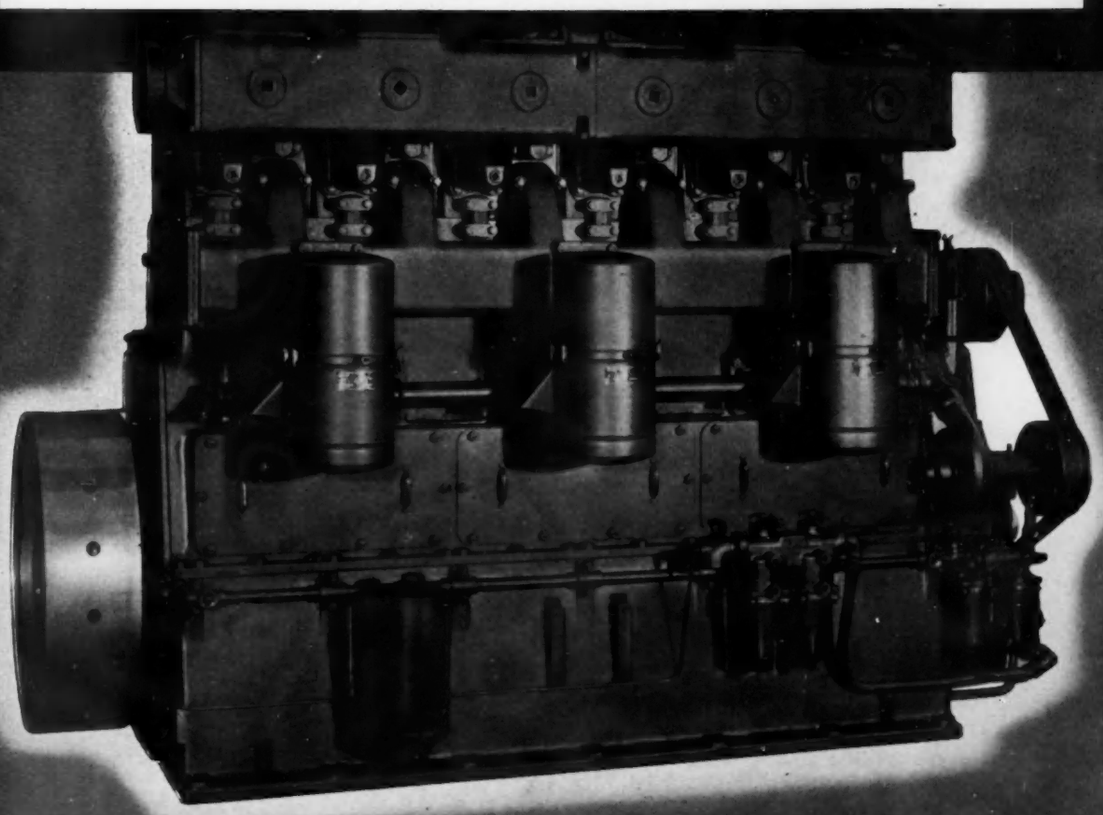

FIGURE 3
Reading depth scale (at pencil).

to the bar. The bar is then placed in the notch in the flanged stake with the length of the bar at right angles to the direction of the pipe line. The operator then levels the exploring bar and the receiver by observing crossed levels on the bar, with the levels centered the bar is then drawn through the stake away from the pipe until a point is reached where the signal cuts out. At this point the plane of the receiver is again tangent to the curvature of the field about the pipe and the depth can be read directly from the scale on the top of the exploring bar (Figure 4).

By calculations based on the fixed angle at which the receiver loop is held on the exploring bar; the location of the electrical center of the loop; the height of the flanged stake, and the O. D. of the pipe; the scale is constructed to give direct readings of the distance from the top of the pipe to the bottom of the flange on the flanged stake, or in other words, direct readings of the amount of cover or fill over the line.

The total length of this survey was 96.53 miles over topography which ranged from fairly flat and open to extremely hilly. Readings were taken at 200-foot stations over the majority of the survey and in spite of bad weather conditions an average rate of approximately 4 miles per day was maintained, while the maximum day's run was 9½ miles in approximately 6 hours working time.

With the development of this method and equipment for pipe line depth determination a serious problem was solved by a new means which proved to be as rapid in operation as the obsolete prod method and equally as accurate, and which would operate over frozen or rocky ground and deep ditch where the prod method could not be used, and which gave true readings of depth, whereas the pipe prod frequently contacts the pipe off center or down the circumference to show false results.

FIGURE 4
Close-up showing crossed levels and depth scale on exploring bar.

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From light pumping duty to heavy vibratory shock loads with severe corrosion — one of D + B's four sucker rods is designed for the specific job at hand.

No longer need the operator worry with many confusing types of sucker rods. D + B has taken a common sense view of the duty sucker rods are to perform and has specialized in the manufacture of these four types. Not only does this reduce your inventory investment, but also is your guarantee of greater quality through specialization.

UANCE—for heavy pumping duty where excessive loads and highly corrosive fluids prevail

TYPE 5—for heavy pumping duty under medium corrosive conditions

HEATREAT—for medium and heavy pumping duty where corrosion is not a great problem

GRADE A—for light to medium duty where corrosion is not a problem

New Process of Coupling manufacture insures perfect shoulder contact. Lapped to near perfect flatness, D + B Couplings give better shoulder contact between coupling and pin maintaining alignment of entire rod string. There is no additional cost for this greater-value coupling.

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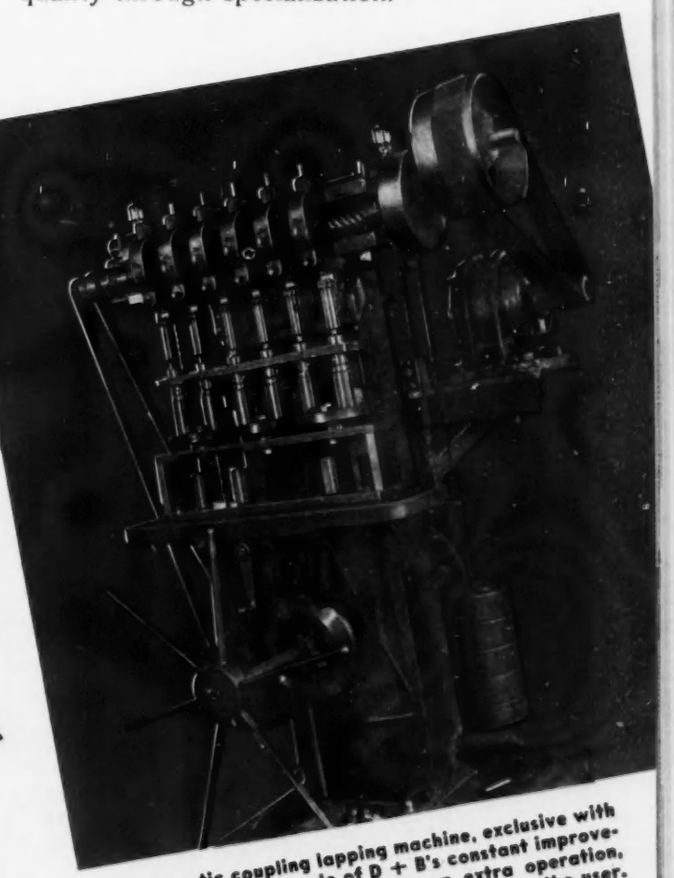
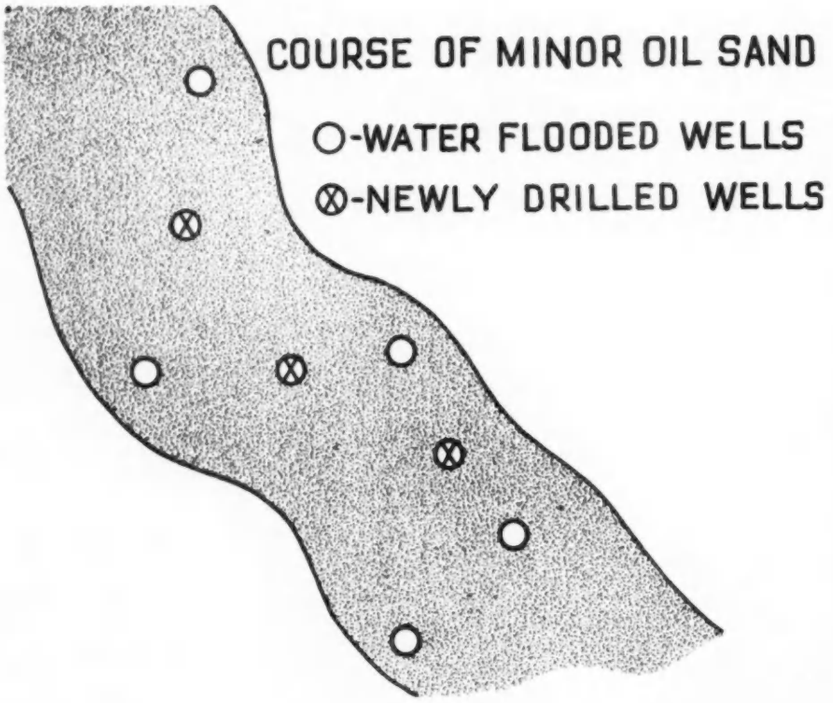


This automatic coupling lapping machine, exclusive with D + B, is another example of D + B's constant improvement of product. This lapping is an extra operation, producing extra value—without extra cost to the user.



Minor Sands Water-Flooded With Success

By F. R. COZZENS
Equity Oil & Gas Company

UPON thousands of acres of territory in the Ohio and Pennsylvania oil fields, Nature, with a little help, is doing a salvage job that probably never could have been accomplished in any other way. Flooding of minor oil sands with fresh water is making a substantial oil recovery possible for stripper operators without the aid of expensive equipment. The basic effect of fresh water upon an oil-bearing formation is known generally, and many producers consider it the final method of oil recovery.

When eastern state laws were recently amended to admit the use of fresh water in oil recovery, tabulations were already available to prove that only in sands of considerable widths could water flooding be made a profitable procedure. Since scores of minor oil sands are less than 200 feet wide, and run courses as crooked as surface streams, the big majority of stripper operators were left without encouragement. But in these formations, nature had already taken a hand. In redrilling many of the minor fields which had been abandoned for 20 to 40 years, operators were surprised to find in the sand of a newly drilled well, a head of fresh, lively oil, somewhat resembling the original flush production. Gas, too, was commonly in evidence, and often in amounts sufficient to operate the equipment. The same operators were far more surprised when, after a few months to a year's pumping, the oil and gas suddenly gave way to floods of fresh water, and the well was ruined. The cause was easily determined. Many of the original wells being carelessly plugged, had filled with water, and its weight and volume had been sufficient, over the course of years, to penetrate the sand for a considerable distance, pushing the oil and gas before it. This gradually resulted in an extremely rich pay in the sand body between the old holes, and a newly drilled well invariably tapped it.

Soon as mining laws were altered to permit water flooding, and even before expensive operations had been started in major fields, the stripper producers did some calculating. Minor oil sands usually are shallow (500 to 1000 feet below the surface). Old wells had been drilled on an average of 200 feet apart, and the crooks and width of the pay formation had been fairly well determined. New wells could be drilled at costs ranging from $300 to $1000, and while short lived, each could be expected to yield a thousand or more barrels of oil before the water came through. The recovery plan which was then mapped out and now being followed, is to drill or stagger new wells as nearly as possible in the center of the sand-streak, and midway between two of the old locations. The drill invariably brings oil, and the narrowness of the streak is an advantage, since the incoming water volume is confined to restricted areas. The new wells are given a light charge of nitroglycerine and pumped vigorously for the duration of their life, which may vary anywhere from a few months to five years. The speed in which the water travels through a formation depends upon the depth and texture of the sand, and the number of old wells which are taking water. Some wells, of course, have been plugged sufficiently to prohibit the drainage of water into the sand.

Once such operations are started, the owner often finds it advisable to re-open old abandoned wells in his territory and see to it that they are kept filled with water. Some enterprising operators work out pumping and pressure systems to hasten water penetration through the oil sands. This may be done to an advantage where air compressors and water pumps are already in the operator's possession, but care must be taken that the cost does not exceed the estimated value of the venture. The most profitable projects so far, have been those where natural water action has forced the oil within range of the new wells. Natural water flooding is, of course, a slow process, but as generally understood, it proves most efficient after various other methods of oil recovery have been exhausted. In scores of minor fields which have been pumped, steamed, air-pressured, and then abandoned, the introduction of fresh water still brings thousands of extra barrels of oil into the operator's tanks.

Drilling Increases in Response To Advance in Crude Prices

DRILLING statistics of the past month gave further evidence that the price of crude oil exerts predominant influence on the number of wells completed.

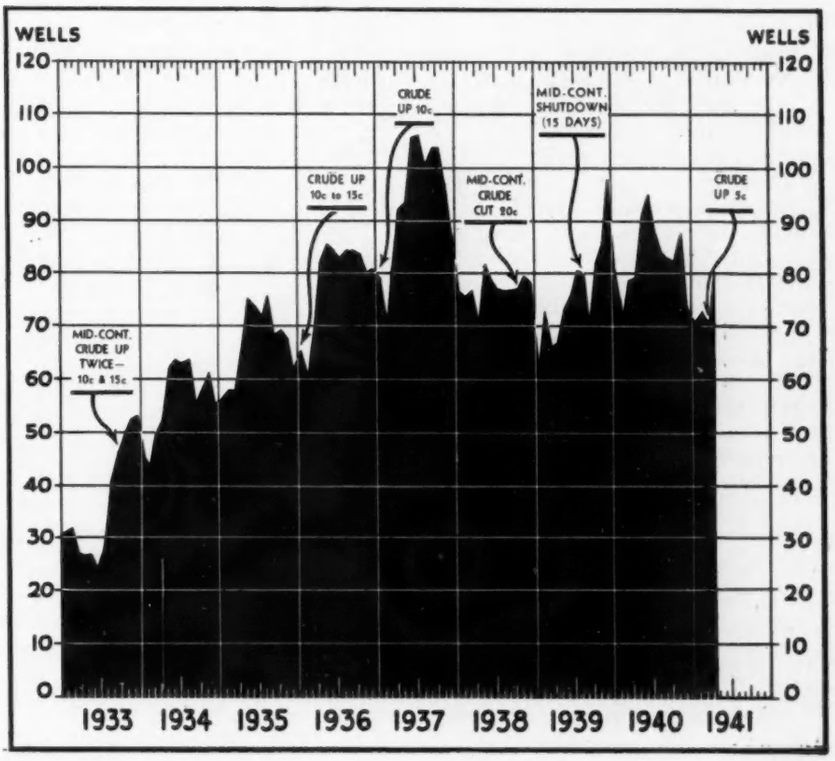
It is not unusual for completions to increase in April, as the weather normally is better for field work than in March, and because of the weather factor some gain in drilling was to be expected for April of this year.

However, the increase which actually occurred was sharper than a normal seasonal gain and apparently was due largely to the recent advances of crude oil prices. Postings were increased an average of 6 to 7 cents a barrel in the Mid-Continent and Middlewest around April 1, and an anticipated increase in California crude prices materialized when postings were advanced 1 to 13 cents April 24.

Following a 7-cent increase in Illinois crude prices at the beginning of April, an additional advance of 5 cents a barrel was made at the close of the same month as production continued to decline.

The situation in Illinois has hastened strengthening of the crude markets in the Mid-Continent, although demand for crude has been generally stimulated by

Average Daily Well Completions in U. S., by Months
(Latest monthly data subject to slight revision)



Miscellaneous Well Completions in the United States in 1941

(This tabulation gives detailed information on "miscellaneous" wells included in accompanying main table of all completions.)

STATE OR DISTRICT	MONTH OF APRIL								FIRST FOUR MONTHS OF 1941							
	Total Miscellaneous	Old Wells Deepened					Water Input	Salt Water Disposal	Total Miscellaneous	Old Wells Deepened					Water Input	Salt Water Disposal
		Total	Oil	Gas	Dry	Initial Production				Total	Oil	Gas	Dry	Initial Production		
Colorado	..	..	..	..	..	.....	....	....	1	1	..	..	1	.....	....	....
Illinois	17	17	16	..	1	2,143	....	....	51	47	41	..	6	6,681	....	4
Indiana	2	2	2	..	..	275	....	....	13	10	9	..	1	792	*1	2
Kansas	7	6	5	..	1	4,907	....	1	36	30	24	..	6	30,602	....	6
Kentucky	..	..	..	..	..	.....	....	....	2	2	1	..	1	8	....	....
Louisiana: North	1	1	..	..	1	.....	....	....	2	2	..	..	2	.....	....	....
New Mexico	1	1	1	..	..	5	....	....	1	1	1	..	..	5	....	....
New York: Allegany	16	..	..	..	..	.....	16	....	84	..	..	..	..	.....	84	....
Ohio	16	1	..	1	..	.....	15	....	46	2	..	2	..	.....	44	....
Oklahoma	18	17	15	..	2	799	*1	....	71	63	44	3	16	7,235	*5	3
Pennsylvania: Bradford	110	..	..	..	..	.....	110	....	443	..	..	..	..	.....	....	443
Texas	5	5	2	..	3	1,004	....	....	20	18	9	1	8	3,710	....	2
East Texas Field	..	..	..	..	..	.....	....	....	2	..	..	..	..	.....	....	2
Rest of East Texas	..	..	..	..	..	.....	....	....	1	1	..	..	1	.....	....	....
North Texas	4	4	1	..	3	504	....	....	7	7	2	..	5	555	....	....
South Texas	1	1	1	..	..	500	....	....	5	5	3	1	1	1,200	....	....
Corpus Christi	1	1	1	..	..	500	....	....	3	3	3	..	..	1,200	....	....
Laredo	..	..	..	..	..	.....	....	....	2	2	..	1	1	.....	....	....
West Texas	..	..	..	..	..	.....	....	....	5	5	4	..	1	1,955	....	....
West Virginia	3	3	..	3	..	.....	....	....	7	7	..	7	..	.....	....	....
Wyoming	1	1	1	..	..	22	....	....	3	3	2	1	..	158	....	....
Total United States	197	54	42	4	8	9,155	142	1	780	186	131	14	41	49,191	134	460

* Gas input.

the expansion of domestic consumption of virtually all petroleum products.

In these circumstances, it is indicated that more crude will be used this year and that the markets will be strong, with prices firm at present or still higher levels. (A further increase in the Mid-Continent would not be at all surprising, in view of the second advance in Illinois and the continued improvement of the markets for gasoline, lubricants, and most other refined products.)

The strong and expanding market for crude oil naturally is encouraging producers to become more active in the drilling of new wells, and the confident attitude of operators was attested in the record of completions in April.

During the month, wells were completed in the United States at the rate of 81 daily, compared with 71 daily in March and January and 72 daily in February. The completions also ran higher than in April of last year, when the average was 79 daily.

In the first four months of 1941, there were only 5 percent fewer completions than in the corresponding months last year, on a weekly or daily average basis.

More Drilling Rigs Put Into Use in April

STATE OR DISTRICT	TOTAL RIGS IN OPERATION (Drilling, Rigs Up, Shut Down)				DETAILS OF MAY 1 1941 FIELD ACTIVITY					
					Rigs in Operation			Prelim. Activity		
	Year Ago (May 1, 1940)	Month Ago (April 1, 1941)	Now (May 1, 1941)	Percent Change From Year Ago	Drilling	Rigs Up	Shut Down	Derricks	Locations	Total Operations
Alabama	2	7	6	+200.0	2	....	4	....	....	6
Arizona	7	7	7	....	1	....	6	1	....	8
Arkansas	27	31	39	+ 44.4	16	6	17	2	4	45
California	342	253	266	— 22.2	169	47	50	....	98	364
Colorado	29	29	27	— 6.9	6	....	21	....	....	27
Florida	3	2	2	— 33.3	....	....	2	....	....	2
Georgia	2	4	3	+ 50.0	....	....	3	....	....	3
Illinois	301	302	320	+ 6.3	246	44	30	....	33	353
Indiana	83	79	74	— 10.8	49	5	20	....	17	91
Iowa	2	4	5	+150.0	4	....	1	....	....	5
Kansas	287	253	265	— 7.7	232	18	15	9	13	287
Kentucky	55	31	37	— 32.7	17	7	13	....	4	41
Louisiana	184	187	199	+ 8.2	156	15	28	21	84	304
North Louisiana	36	67	74	+105.6	42	8	24	8	4	86
South Louisiana	148	120	125	— 15.5	114	7	4	13	80	218
Michigan	175	152	138	— 21.1	81	19	38	....	31	169
Mississippi	31	31	45	+ 45.2	22	6	17	2	2	49
Missouri	18	15	15	— 16.7	3	2	10	....	1	16
Montana	42	44	49	+ 16.7	18	3	28	....	....	49
Nebraska	20	27	35	+ 75.0	19	2	14	3	2	40
New Mexico	142	100	103	— 27.5	62	7	34	....	15	118
New York	95	63	65	— 31.6	47	7	11	4	10	79
Ohio	202	267	270	+ 33.7	195	28	47	17	46	333
Oklahoma	368	346	371	+ 0.8	275	41	55	28	32	431
Oregon	....	2	3	....	2	....	1	....	....	3
Pennsylvania	415	372	366	— 11.8	264	38	64	25	63	454
South Dakota	2	....	....	....	....	....	....	....	....	....
Tennessee	6	8	8	+ 33.3	4	....	4	....	....	8
Texas	1,303	1,266	1,313	+ 0.8	1,045	84	184	82	722	2,117
East Texas Field	14	21	23	+ 64.3	17	2	4	5	10	38
E. Tex. Border Counties	13	16	15	+ 15.4	7	2	6	2	2	19
Rest of East Texas	45	68	83	+ 84.4	56	6	21	9	16	108
North Texas	250	199	200	— 20.0	163	9	28	7	147	354
South Texas	305	308	304	— 0.3	249	25	30	29	260	593
Corpus Christi Area	156	179	175	+ 12.2	150	16	9	15	77	267
Laredo Area	85	76	77	— 9.4	62	5	10	9	128	214
San Antonio Area	64	53	52	— 18.8	37	4	11	5	55	112
Texas Gulf Coast	151	128	124	— 17.9	99	8	17	12	85	221
Texas Panhandle	122	97	106	— 13.1	85	15	6	5	9	120
West Texas	291	334	370	+ 27.1	316	12	42	13	177	560
West Central Texas	112	95	88	— 21.4	53	5	30	....	16	104
Utah	7	4	5	— 28.6	3	....	2	....	1	6
Washington	....	....	3	....	1	....	2	....	....	3
West Virginia	116	176	191	+ 64.7	136	22	33	12	34	237
Wyoming	61	59	57	— 7.0	25	3	29	....	6	63
Total United States	4,327	4,121	4,287	— 0.9	3,100	404	783	206	1,218	5,711

Completions in First Four Months Within 5 Percent of Last Year's Record

STATE OR DISTRICT	MONTHLY COMPLETIONS								CUMULATIVE COMPLETIONS—First 4 Months							
	Total			Details for April, 1941[1]					Total			Details for 4 Months of 1941				
	Year Ago (April, 1940)[2]	Month Ago (March, 1941)[3]	Latest Data (April, 1941)[1]	New Wells Drilled for Oil and Gas			Miscellaneous[8]	Initial Oil Production	1940[4]	1941[5]	Percent Change in Weekly Average	New Wells Drilled for Oil and Gas			Miscellaneous[8]	Initial Oil Production
				Oil	Gas	Dry						Oil	Gas	Dry		
Arkansas	21	12	16	9	....	7	....	2,094	66	50	— 19.4	27	....	23	....	6,013
California[6]	99	68	84	80	....	4	....	71,297	354	350	+ 4.6	282	2	66	....	246,431
Colorado	1	3	3	....	....	3	....	....	3	6	+118.8	1	1	3	1	15
Illinois	338	309	268	191	3	57	17	35,749	1,146	1,009	— 6.8	710	6	242	51	148,507
Indiana	42	43	39	20	4	13	2	1,645	128	152	+ 25.4	79	13	47	13	9,786
Kansas	164	180	164	117	4	36	7	172,698	517	624	+ 27.9	419	16	150	39	634,972
Kentucky	28	10	19	6	....	13	....	377	80	76	....	24	1	49	2	1,810
Louisiana	161	114	97	68	1	27	1	13,914	502	421	— 11.2	283	23	113	2	61,789
North Louisiana	62	40	23	15	1	6	1	1,505	183	149	— 14.7	90	17	40	2	12,080
South Louisiana	99	74	74	53	....	21	....	12,409	319	272	— 9.6	193	6	73	....	49,709
Michigan	119	75	67	33	9	25	....	3,656	435	257	— 37.3	104	18	135	....	18,558
Mississippi	16	16	8	7	....	1	....	4,705	50	46	— 3.6	35	1	10	....	20,976
Missouri	7	4	5	....	1	4	....	....	28	20	— 25.0	1	4	15	....	5
Montana	17	22	16	13	1	2	....	1,677	44	64	+ 58.3	41	16	7	....	7,229
Nebraska	....	4	5	2	....	3	....	428	....	27	....	9	1	17	....	2,537
New Mexico	80	33	29	23	1	4	1	6,158	264	113	— 55.1	86	6	20	1	23,130
New York	103	63	56	40	....	....	16	246	365	214	— 40.6	128	2	....	84	783
Ohio	30	136	139	44	54	25	16	357	242	495	+117.2	113	229	107	46	2,220
Oklahoma	248	179	161	79	8	56	18	29,818	729	613	— 11.1	317	45	179	72	117,148
Pennsylvania[7]	229	279	259	120	21	8	110	150	1,235	1,049	— 10.1	482	106	36	425	673
South Dakota	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....
Tennessee	2	....	1	....	....	1	....	....	11	6	— 42.6	....	....	6	....	....
Texas	946	854	784	567	22	190	5	310,812	3,370	2,919	— 8.1	2,118	76	705	20	1,303,595
East Texas Field	26	65	40	40	....	....	....	83,400	101	219	+130.4	213	....	4	2	421,134
East Texas Border Co.	....	3	3	1	1	1	....	9,791	3	7	+156.3	1	5	1	....	312
Rest of East Texas	21	26	44	30	5	9	....	9,543	79	122	+ 65.1	70	12	39	1	27,340
North Texas	198	201	210	130	1	75	4	32,233	732	699	+ 1.2	437	3	252	7	140,769
South Texas	276	205	203	132	9	61	1	49,864	905	727	— 14.9	471	24	227	5	184,073
Corpus Christi	129	107	111	81	4	25	1	39,577	409	383	— 0.9	289	10	81	3	149,076
Laredo	117	82	76	43	5	28	....	8,659	413	265	— 31.9	137	14	112	2	29,163
San Antonio	30	16	16	8	....	8	....	1,648	83	79	....	45	....	34	....	5,834
Texas Gulf Coast	103	71	48	35	2	11	....	9,033	396	217	— 41.8	163	14	40	....	45,256
Texas Panhandle	53	46	52	47	1	4	....	9,343	191	172	— 4.7	157	5	10	....	34,378
West Texas	205	183	140	133	....	7	....	115,247	713	570	— 16.0	528	2	35	5	437,833
West Central Texas	64	54	44	19	3	22	....	1,817	250	186	— 21.0	78	11	97	....	12,500
Utah	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
West Virginia	30	56	48	3	34	8	3	55	176	212	+ 27.8	19	147	39	7	187
Wyoming	18	10	10	9	....	....	1	7,920	54	32	— 40.0	25	....	4	3	14,962
Total United States	2,769	2,470	2,278	1,431	163	487	197	663,756	9,800	8,755	— 5.0	5,303	713	1,973	766	2,621,326

[1] Wells completed in 4 weeks, or 28 days, ended April 28, 1941. [2] Wells completed in 5 weeks, or 35 days, ended April 29, 1940. [3] Wells completed in 5 weeks, or 35 days, ended March 31, 1941. [4] Wells completed in 18 weeks, or 126 days, ended April 29, 1940. [5] Wells completed in 17 weeks, or 119 days, ended April 28, 1941. [6] California figures from the American Petroleum Institute except for April, 1941. [7] Bradford, Pennsylvania, figures from The Producers Monthly except for April, 1941. [8] Details appear in accompanying table.

HOW FRANKS MFG. CORP. WELL SERVICING AND DRILLING UNITS SAVE WELL SERVICING COSTS

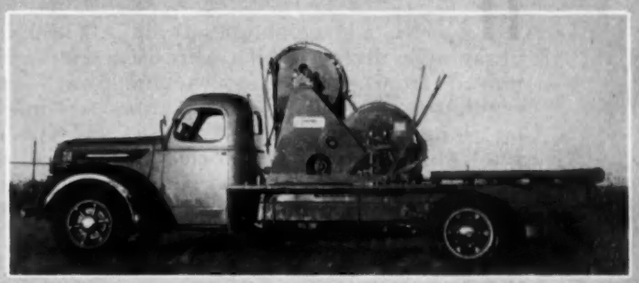
A major oil company in East Texas is using Franks servicing units, mounted on trucks, to service 1,000 wells. Individual derricks for the 1,000 wells would cost approximately $2,000,000 in this territory. One Franks unit of sufficient capacity will service approximately 100 wells. Each unit costs what 10 individual derricks would cost. Therefore, the Franks units are effecting a net savings of the cost of 90 derricks out of each 100.

Franks telescoping well servicing units are made in sizes from single and double pole masts to 90 ft. telescoping open face derrick types for depths from the shallowest to 8,000 feet. Units without derricks will service to 10,000 feet. The derricks are mechanically raised and fold down over the truck for transportation. Crown block and lines remain strung while moving.

See Franks representatives listed below, or write for further information and complete specifications.

Franks single pole 55' unit. Telescopes to 34'

Franks 90' servicing unit for depths to 8,000 ft.



Franks unit without derrick for territories having individ- derricks. Unit also has drum for sand reel. Note bed-space on truck.

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FRANKS MFG. CORP.
WELL SERVICING AND DRILLING UNITS
TULSA, OKLAHOMA

Practical Operating Hints for

1. FLOW CONTROL

Diaphragm Regulator Converted to Lever Control for Separator Use

This regulator has been converted to a lever control unit for use on a separator.

HAVING a large number of diaphragm regulators which were removed from service as vacuum regulators on field lines at plants no longer operating, Arkansas Fuel Oil Company developed attachments to convert these instruments to lever control units which make them available for variable control use in East Texas on oil and gas separators.

In converting the regulators, the valve stem is removed and threaded at the upper end to take a clevis. The clevis extends through the cast iron cover so that the end of a weight arm is attached with the clevis pin. A supporting bracket is cast and turned to fit snugly around the cover top for support of the weight arm. A light cover of galvanized iron is soldered in shape to fit closely over the short end of the weight arm, clevis and hole in the regulator cover to prevent entrance of rain and drifting sand which might cause damage to the diaphragm of the valve. In converting these regulators, any pressure within the range of the instrument may be maintained on separators and flow tanks, from several inches vacuum to as many pounds as required for plant operation.

Six-inch belting provides a rack for tools and fittings used when servicing.

2. TOOL CARE

Rack Fashioned From Six-Inch Belting

DURING times when tubing or rods are being pulled, small tools, wrenches and fittings are very apt to get lost or at least covered with oil when they are laid on boxes or on the floor near the well head.

A gang-pusher of one company makes good use of short lengths of 6-inch belting, nailing them in loop-fashion at several strategic points on railings and other parts of the derrick floor.

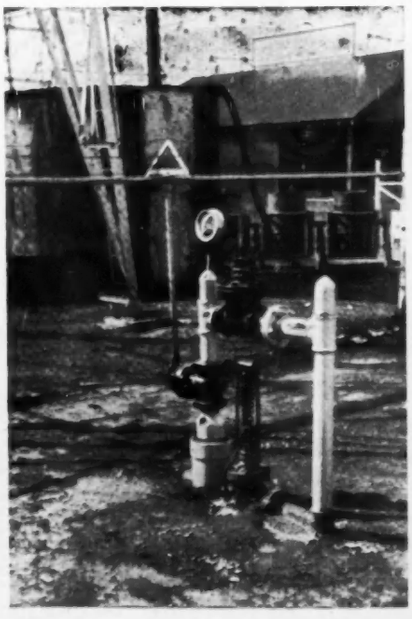
Aside from its value in preventing tools from becoming lost or dropped in the cellar, the proper tool always can be picked up without waste of time, when quick action might prevent an accident of some kind.

3. WELL PROTECTION

Device Reduces Casing Pressure Tampering

IN MANY fields wells produce from loose, unconsolidated sands that have a tendency to cave, sand up the tubing or pump inlet and otherwise cause production troubles. Proper control of the casing pressure on each well is of particular importance in such areas, since by rapidly letting off pressure, a sudden differential of pressure is created between the formation and the well bore, resulting in an in-rush of gas and fluid that would carry much loose sand into the well. This is particularly true of new wells.

One company acts to eliminate the human element contribution to



This pipe and chain arrangement over casing outlet prevents molestation.

THE PRODUCTION MAN . . .

This installation combats hydrate formation in flow line of a high-pressure well.

this difficulty by removing the hand-wheel from the casing outlet gate and chaining a short length of 1¼-inch pipe over the stem. A tee screwed to the top of a 14-inch section of pipe, slipped over the valve stem, provides a loop through which the light chain can be passed as it is looped around the lead line and gate.

The chain is locked, and keys given to two or three superintendents or field foremen who can be held responsible for the particular well when changes in producing conditions are to be made. This safeguard also serves to prevent molestation of the valve by children who may be playing near the well.

4. CONDENSATION

Flow Lines Kept Clear Of Gas Hydrates

WHEN production of natural gas from a well exceeds 50,000,000 cubic feet per day, formation of hydrates within the flow lines may prevent true open-flow conditions and seriously restrict production.

In the Chickasha field, Grady County, Oklahoma, a unique installation is successfully combatting this problem. The 3-inch flow line is tied in to a 4-inch header. To this header are connected two 1-inch lines and one ½-inch line, each fitted with plug valve. The smaller, center line serves as auxiliary and is utilized only when production taxes the capacity of the two 1-inch normal flow lines.

Each flow unit carries a flange union, carrying a choke or limiting disc. On the 1-inch lines, the chokes are ⅝-inch, on the ½-inch line, it is ¼-inch. These choke plates are finished flush or square on the high pressure or well side, and have a bevel on the low-pressure, discharge side, as a means to prevent accumulation of gas hydrates at the point where maximum expansion, and consequent greatest temperature drop, occurs. High-velocity gas, through these orifices, tends to cut away and blow clear any hydrate as it may be formed.

Beyond the flange union, each line again is expanded, entering a 4-inch lead through a standard swage, these leads being tied into a header. A 12-inch drip serves to remove hydrates from the system.

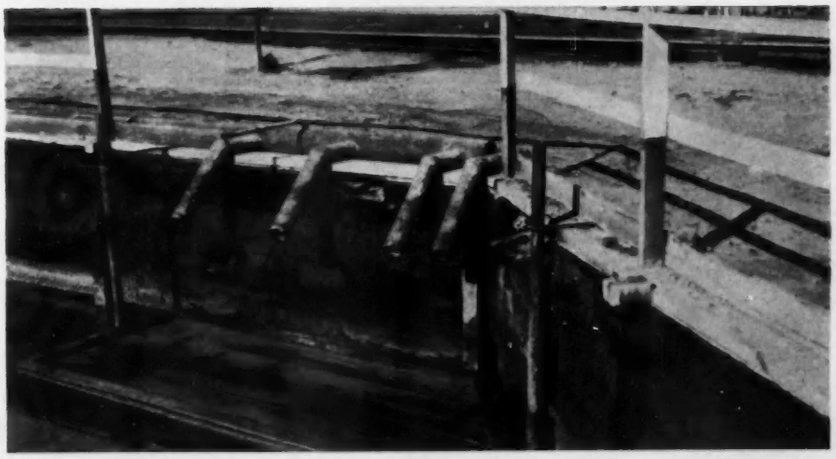
5. TREATING

Float Cuts Surging In Settling Tank

IN ONE of its larger salt-water treating settling ponds, one company experienced considerable difficulty in maintaining the board walls near the point where the incoming water was directed into the pond. While the flow was broken into as many smaller streams as practical, it was found that underwater currents and surging still persisted in undermining the walls and their supports, and at the same time kept the fluid in the pond in an undesirably roiled and muddy condition.

The difficulty was overcome by constructing a float of 2-inch planks, measuring approximately five feet wide by 12 feet long. A loop of ¾-inch sucker rod material, and of sufficient size to allow a 2-inch pipe to pass through, was fastened to each end of the float. Two lengths of 2-inch pipe, passing through the loops and extending into the bottom of the pond, were anchored firmly at the top, care being taken that the distance between the poles was the same at both the top and bottom.

Sliding up and down the pipe guides, the float, requiring little if any attention, effectively prevented surging regardless of the water level in the pond.



A float in this salt-water settling pond eliminates surging of fluid in the tank.

2. New Mission Compound 308 Valve Inserts give longer life under all conditions and cut insert costs more than half.
PAT. PEND.
1. Removable, wear-taking bushings protect the expensive valve seat and reduce the valve seat replacement costs.

REDUCE YOUR PUMPING COSTS BY U

Two Reasons for

Low Slush Pump Upkeep Costs

MISSION SLUSH PUMP VALVES reduce valve maintenance costs in two ways: 1. Valve seat replacement costs are reduced with removable bushings. 2. Insert failures are reduced with the new Compound 308 Valve Inserts.

Low cost, removable bushings take the wear instead of the valve seat. These bushings are easily replaced and cost only a fraction of the cost of the entire seat. This means lower valve seat replacement costs in your pumps.

New, compound 308 Valve Inserts last 3 to 5 times longer than regular inserts in ordinary mud and up to 10 times longer than oil resisting inserts in hot mud, treated mud or oil and gas. Two years field tests have proved that these inserts reduce shut-down time and insert replacement costs.

Make this test. Compare Mission valves (with Compound 308 Inserts) with the valves you have been using *in your pumps*. If your cost records don't show that Mission valves are *far more economical* your money will be promptly refunded. **You can't lose.** So why not try these money-saving valves. Mission Slush Pump Valves are sold at your favorite supply store. Mission Manufacturing Company, Houston, Texas. Export Office, 30 Rockefeller Plaza, New York.

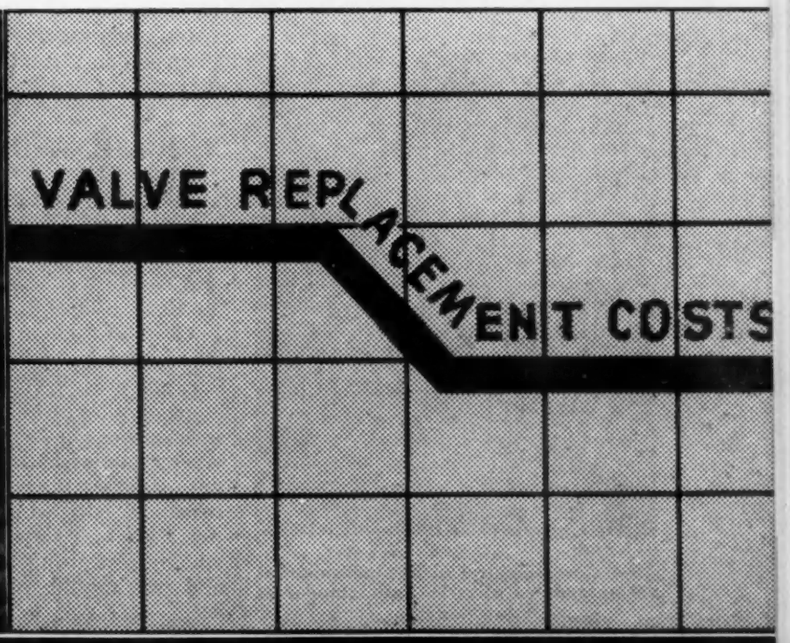
MISSION

SLUSH PUMP PARTS

Your pumps stay running longer and cost less to repair when equipped with Mission Pump Parts

You can depend on your slush pumps for economical, trouble-free performance when they are equipped with Mission Slush Pump Valves.

Check up! We believe your valve maintenance costs will go down like this when you switch to Mission Slush Pump Valves for all your pumps.

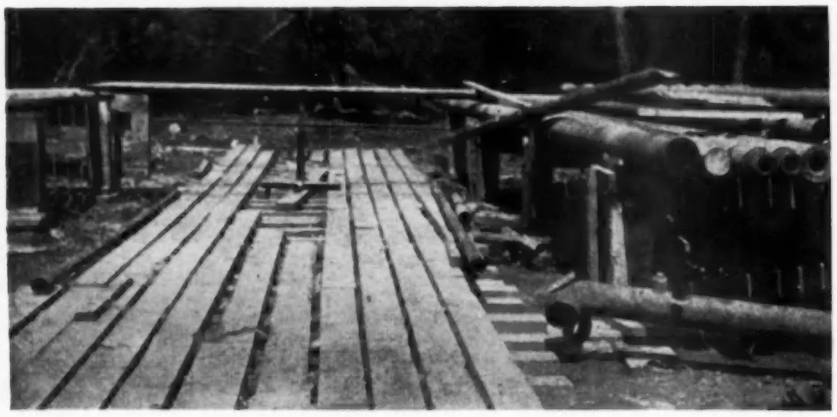


USING ALL MISSION PUMP PARTS

Practical Operating Hints for

1. PIPE HANDLING

Transfer of Pipe From Rack to Rack Aided By Swinging Steel Transfer Bridges



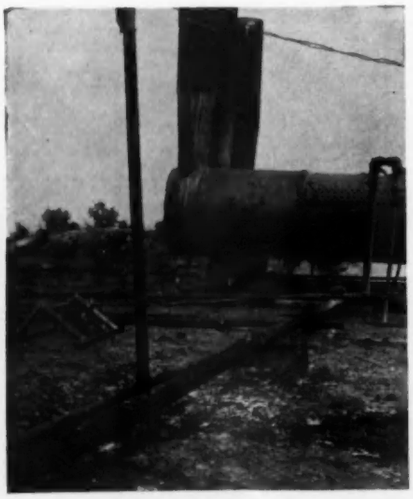
Bridges of steel pipe facilitate transfer of pipe from one rack to the other.

TRANSFER of drill pipe from one storage rack to another, especially when a planked roadway lies between the racks, calls for building temporary timber supports, across which the pipe may be rolled.

To avoid the need for additional timber, and to permit moving a little pipe as needed, one contractor builds removable transfer bridges of steel pipe. The horizontal members, of 4-inch pipe with ends flattened and beveled to permit easy rolling of the drill stem onto them, are made long enough to span the gap with ample support at either end.

In the center, a flexible saddle connects the cross member with an upright leg, carried on a foot piece of crossed 3-inch pipe. The saddle extends halfway around the transverse member, being pinned to it with a bolt to prevent displacement under load.

The top of the saddle is carried in a three-inch pipe, slipping within the 4-inch upright standard, height being adjustable with a pin through matching holes in both members, allowing the support for the transverse member to be located accurately to prevent sagging.—*M. M. Cooke, Baytown, Texas.*



This steam line of drill-pipe material accommodates electric light standards.

2. RIGGING UP

Drill Pipe Used for Boiler Steam Line

PROMPTED by need for steam lines of sufficient strength to withstand damage in hauling or while in use, one drilling contractor converted some joints of 4½-inch drill pipe into serviceable lines. The tool joints were removed and the threaded ends cut off. With the ends of the pipe rethreaded, the collars and unions necessary for laying the lines are added, permitting joining the pipes and making the proper connections with the boilers. The heavy pipe withstands severe punishment with little damage, and the thick walls insure increased resistance to rust and corrosion.

Welded at intervals to the steam pipes are collars in which 2-inch pipe stands vertically to support the wires of the electric light system stretched from the boilers to the derrick. Into the tops of the pipes, wooden wedges are driven, giving the attached electric wires insulation against the heat of the steam lines. The arrangement gives the lighting system a direct tie-up with the steam lines, and eliminates the necessity of erecting separate poles to support the wires. The pipes are easily removed when the lines are transferred to another location.

3. RIGGING UP

Back-Up Post at End Of Pipe-Rack Walk

WHEN building up a unitized, skid-mounted derrick floor substructure, pipe racks, and pipe walk, one operator found it advantageous to install a combination high-line and back-up post at the far end of the pipe-rack walk. The installation is removable for easy transportation when changing location.

A short length of 6-inch pipe was welded in an outward-slanting po-

This back-up post at the end of the pipe rack walk is easily detachable.

THE DRILLING RIG . . .

sition to the substructure at the far end of the walk. A longer length of 5-inch pipe, fitted with a large eye-bolt at the upper end, was inserted into the short piece welded below the walk level.

The quick-mounting nature of this post has proved of value around the rig, particularly as a back-up when heavy tools and fittings are being pulled along the walk and handled during preliminary rigging-up and during tearing out work around the well.

4. RIGGING UP

Ladders Aid Stabbing Board Adjustment

THE stabbing board usually placed across the derrick from one girt to another quite often is uncomfortably too high or low, depending upon the stature of the man working in the derrick and the average joint length of the particular string of casing being run in the hole.

A California company makes allowance for these factors by building two short all-welded ladders of pipe material, bolting each in place between the fifth and sixth girts on opposite sides of the derrick. Four equal spaces are provided, and sufficient lateral distance left between the sides of the ladders to permit a wide plank to be inserted and tied down at the desired elevation. The ladders also make it unnecessary to provide a number of clamps that otherwise would be needed to hold the plank platform from sliding along the girt.

The company also uses a roller device to prevent chafing of the cat-

Abrasion is lessened by using a long sweep tee to join mud delivery lines.

Ladders of pipe material facilitate adjustment of derrick stabbing board.

line rope against the girts at the point where it passes through to the inside of the derrick. A length of 3-inch pipe serves as a roller on the lower end of a rectangular welded framework of 2-inch pipe.

5. MUD HANDLING

Abrasion Minimized At Pipe Junction

USING a long sweep tee for the junction of the two-mud-pump delivery lines instead of the usual pipe fitting or welded junction will result in gradually changing the direction of flow of the branch stream, deflecting the abrasives inevitably carried in the mud and distributing wear over a long area instead of promoting erosion in a restricted spot of the junction.

The long curve of the junction also serves as shock absorber to prevent crystallization of the weld metal in the tie-in, and greatly reduces the possibility of fracture at that point.

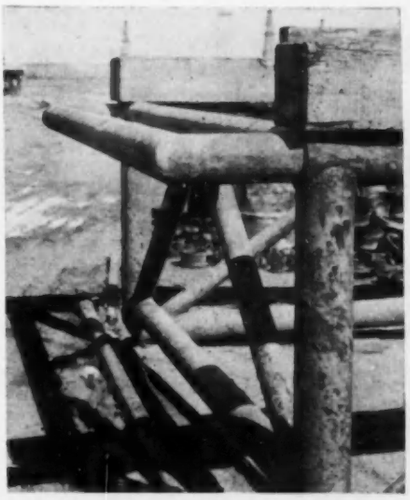
THE practical operating hints for the drilling rig and production man, appearing in these features each week, are secured from oil fields everywhere and offer suggestions that will help to improve field efficiency and safety. The items give an excellent picture of the remarkable ingenuity being exercised by the operating divisions of the industry. Contributions to these features will be paid for at the rate of $5 for each illustrated item accepted. Address contributions to "The Editor, THE OIL WEEKLY, Houston."

6. PIPE HANDLING

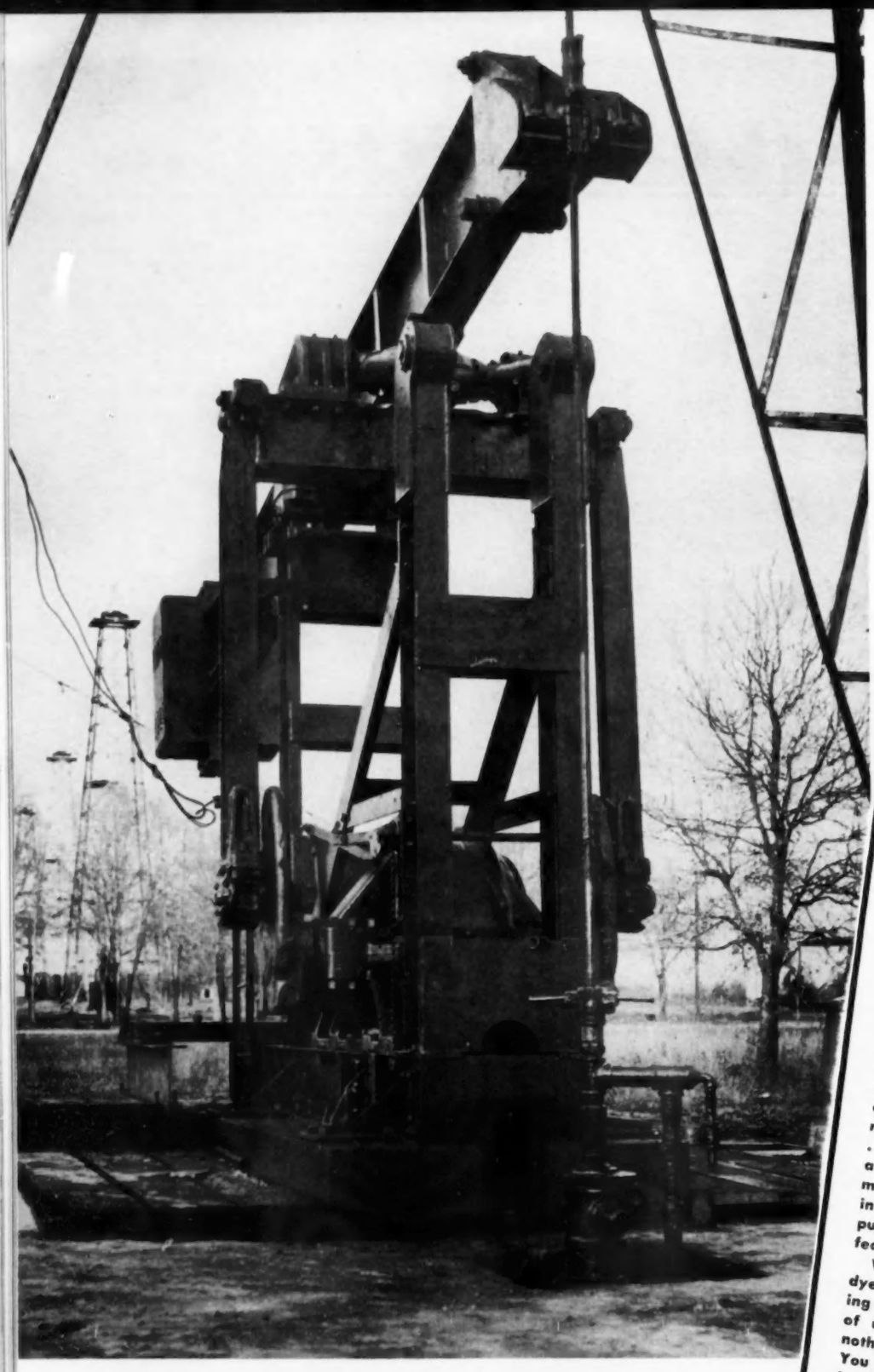
Telescopic Sections For Storage Rack

A CONVENIENT telescoping on the side of each pipe loading rack is being found by one company to be a valuable aid in loading or unloading drillpipe and supplies at each location. It serves a number of uses, the most important of which is as an extension to be pulled out to the edge of the truck bed when it is difficult to spot the truck close to the rack. When several racks are placed side by side to form a single large platform, the extensions are used to bridge spaces between them.

The all-welded skid-mounted rack was built up of 5-inch drillpipe. Smaller drillpipe then was inserted snugly into the open ends of the top section of the rack.



The telescopic section of this pipe rack aids in loading and unloading.



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We find, from the endless list of dyed-in-the-wool Parkersburg Pumping Unit users, that this many hours of unfailing, trouble-free service is nothing particularly unusual at all. You can go in most any pumping field in the country and find similar, or better, performance records for Parkersburg's finely designed, quality-built pumpers.

This unit's range of adjustment is from 54" to a 10' stroke. The same quality of design, material and faultless workmanship is available in Parkersburg Pumping Units for every class of service. See your Composite Catalog for complete specifications . . . and the phone number of your Parkersburg Representative, who will welcome the chance to serve you.

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DEPENDABLE ENGINEERED PUMPERS

HIGHLIGHTS IN THE WEEK'S NEWS

Federal Control

Congress Indicates no Need for Federal Oil Control

Indicating that there was no immediate need for Federal control of the petroleum industry but that it was advisable for Congress to keep in close touch with developments, Representative William P. Cole, Jr., chairman of the oil subcommittee of the House Interstate and Foreign Commerce Committee, last week secured continuation of the investigation until January 3, next.

Cole advised the House that his group would recommend legislation to deal with the southeastern pipe line situation next week and that, later in the session, reports would be submitted on other phases of the oil situation. He refused, however, to reveal what form the pipe line legislation would take.

A resolution continuing the subcommittee throughout the remainder of the current session was brought before the house April 29, and its adoption was urged by Representative Charles A. Wolverton, a Republican member of the group, who pointed out that this would afford an opportunity "to study the question of oil production and its attendant problems in the light of the needs created by the present emergency" and make recommendations from time to time should changing conditions require Congressional action.

Wolverton highly commended the oil industry and the states for the manner in which they were attacking their problems, and pointed out that the subcommittee last month made surveys of conditions in Louisiana, Arkansas and Texas.

"We are gratified by the progress that has been made in the conservation of our oil reserves," he told the house. "State authorities and the oil industry have cooperated with federal authorities in producing this highly beneficial result.

"Furthermore," he said, "we were amazed at the progress that has been made in the last few years in obtaining finer and better grades of gasoline and in larger quantities per barrel of crude oil than heretofore. What is true of this one product, taken from crude oil, is equally true of the numerous and varied products originating from petroleum. The advancement that has been made in all branches of the oil industry has been so great that it is almost unbelievable. Suffice it to say that our observation of what the oil industry is doing, and is prepared to do in behalf of national defense gives assurance and courage to all who are interested in our national security and defense.

"The oil industry can be depended upon to do its patriotic part in fulfilling whatever task is laid upon it in the days that are ahead.

"The committee that has the responsibility of making recommendations to the Congress for legislation dealing with this great industry believes that it can best perform its duties and fulfill its responsibilities by continuing in existence during the emergency that now exists, and making recommendations based upon conditions as they arise. We therefore ask that the house give its approval to the resolution."

The continuance of the subcommittee was voted by the House without debate, and Cole inserted in the Congressional Record a brief outline of its history.

He pointed out that the subcommittee was originally set up in 1934, and made a report on the oil situation the following year. The investigation was revived in 1939, at the suggestion of President Roosevelt, and that it was planned to make a final report last January, but prior thereto the President asked for an investigation of the national defense aspects of the situation and the subcommittee was given a four-months extension due to expire May 1.

Cole did not refer specifically to proposals for federal control of production which have been advanced, but made it clear that the subcommittee saw no need for such regulation.

"It is pleasing to the committee to be able to report at this time, preliminary to our final report, that the petroleum industry is apparently in shape to meet almost any conceivable demand made upon it in these serious times," he said. "The conduct of certain states toward conservation of this most important natural resource is not what it should be, but we are hopeful before our final report is made that that situation will be materially improved."

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Allowables

Texas Commission Restrained On Driscoll Proration Order

Continental Oil Company has obtained a temporary injunction in the 126th Texas District Court preventing enforcement of the Texas Railroad Commission's proration order in the Conoco Driscoll field, Duval County. Trial of he case on its merits has been set for May 12.

Directly involved in the suit is a formula the commission began using in March to distribute production between oil fields on the basis of demand and the quality of the crude produced. The company contended it has a market for 4000 barrels daily from the field, that this can be produced without waste, and that to deny it the right to produce the oil is an invasion of property rights.

The state insists that to allow the company its full demand would result in selective buying, and consequent physical waste through elimination of markets for other fields.

Neither the commission nor the company contended that physical waste was occurring within the field under the rate of flow provided in the commission order, or under the rate of 4000 barrels daily, which the company seeks. The field was allowed to produce 1296 barrels daily in April.

The court's order provided that the commission should reinstate the order in effect on February 1, which provided for a net allowable of 2115 barrels daily. To this would be added allowables for new wells completed since that time.

Attorneys observing the case were rather surprised at the decision because "irreparable damage" is one of the requirements for the issuance of a temporary order, and prior to the decision they did not think this condition had been proven sufficiently to warrant temporary relief.

The company pointed out in its arguments that the formula used by Texas was evidently questioned by some people, at least since there had been introduced in the legislature when the suit was filed, a bill to permit proration as provided in the formula. This bill, the company's attorneys said, was virtually a duplicate of the Kansas law.

This is the first suit which has involved directly the formula which the commission has used to determine the total market for all oils of five different grades, and then allocates them equitably between the fields. In determining the equity between fields, consideration is given to acreage, depth of the well and similar factors affecting production.

Assistant Attorney General James P. Hart, who defended the order for the commission, protested vigorously against issuance of a temporary order. He pointed out that field after field has a special market which is not entirely

filled by production from that field, and that everyone would soon be in court demanding the right to produce all of the oil he could sell so long as operations within the field itself did not lead to physical waste.

Several suits based on similar grounds are anticipated.

May Allowables Foreshadow Production Within Demand

United States crude oil production will be restricted in May with practically the same degree of strictness as in April, during which month there was virtually no net change in crude stocks. This is indicated by the program of state allowables for May, which are calculated to hold output virtually in balance with the current market requirements for domestic crude.

Eight prorated states, which account for about 85 percent of the country's crude oil production, adopted May allowables 88,784 barrels daily below indicated market demand for crude from those states, as shown in an accompanying table. However, one of them, California, consistently produces about 40,000 barrels a day in excess of its state allowable, while the others hold actual production close to prescribed volumes. Consequently, for the eight states, actual production should be around 50,000 barrels under estimated demand, on the basis of wells on production at the beginning of the month, although as new wells are completed and are assigned quotas, permitted production will be somewhat larger.

Also entering the situation is the fact that Illinois continues unable to produce all the oil for which there is demand, its output in April having been about 12,000 barrels short of the amount that could be marketed in orderly manner in May as indicated by the United States Bureau of Mines forecast for the month.

All prorated states have May allowables that closely match or fall below the Bureau estimates of demand.

As compared with the figure of 88,784 barrels daily by which the May allowables of the eight prorated states fall below indicated demand, there was a similar deficiency of 81,592 barrels for April.

Legislation

Texas House Reports Bill to Strengthen Demand Statute

The Texas house committee on oil, gas and mining last week reported favorably a bill to strengthen the Texas market demand statute. At a hearing last week, the committee voted 10 to 3 to approve a committee substitute, which was entirely different from the bill that was introduced originally.

Railroad Commissioners Jerry Sadler and Olin Culberson appeared at the hearing to urge passage of the bill. They saw in it a means of ending selective buying, and at the same time fixing allowables between fields on a uniform basis.

Opponents of the bill contend it destroys all incentive for finding new markets, and that if purchasers are unable to buy their oil from the Texas fields where they want to purchase, then they will turn to other states to get production needed to operate refineries.

Majors and independents alike were divided on the bill, but it was approved by the North Texas Oil & Gas Association and the West Central Texas Oil & Gas Association. Independents favoring the bill saw in it an assurance that there would always be a market for their oil, a market equal to that held by other operators producing similar grades of crude under similar circumstances.

Section 6 of the new bill is set out in full below:

"Whenever the total amount of oil which all the pools in the state can produce exceeds the amount reasonably required to meet the reasonable market demand for oil in this state, then the Railroad Commission of Texas shall limit the total amount of oil which may be produced in the state by fixing an allowable for the state which will not exceed the reasonable market demand for oil in this state. The Railroad Commission of Texas shall then allocate or distribute the allowable for the State among the pools on a reasonable basis and in such amounts and manner as to avoid undue discrimination, and so that waste will be prevented. If the amount allocated to a pool as its share of the allowable for the state is in excess of the amount which the pool should produce to prevent waste, then the Railroad Commission of Texas shall fix the allowable for the pool so that such waste will be prevented. In allocating the allowable for the state, the Railroad Commission of Texas shall formulate rules setting forth standards or a program for the distribution of the allowable for the state, and shall distribute the allowable for the state in accordance with such standards or program, and where conditions in one pool or area are substantially similar to those in another pool or area, then the same standards or program shall be applied to such pools and areas so that as far as practicable a uniform program will be followed. The Railroad Commission of Texas shall not be required to determine the reasonable market demand applicable to any single pool except in relation to all pools producing oil of similar kind and quality, and in relation to the demand applicable to the state, and to the effect of limiting the production of pools in the state. In allocating allowables to pools, the Railroad Commission of Texas shall not be bound by nominations or desires of purchasers to purchase oil from particular fields or areas, and the Railroad Commission of Texas shall allocate the allowable for the state in such manner as will prevent undue discrimination against any pool or area in favor of another or others which would result from selective buying or nominating by purchasers of oil, as such term 'selective buying or nominating' is understood in the oil business.

"The fact that the conservation of the oil resources of this state is vital to the welfare of this state and to national defense and that discriminatory and selective purchasing of oil leads to discrimination, destruction of property and waste, creates an emergency and an imperative public necessity that the constitutional rule requiring bills to be read on three several days in each house be suspended, and said rule is hereby suspended and this act shall take effect and be in force from and after its passage, and it is so enacted."

Texas Levies Increased Taxes on Oil Industry

The Texas legislature passed and the governor signed a tax bill to raise between 23 and 24 million dollars annually. The bill obtained a unanimous vote in the senate, only one dissenting vote in the house, and was immediately signed by the governor.

Industry is to supply the funds with which old age pensions are to be provided; the bill appropriates $1,750,000 a month to the old age pension fund.

Crude oil is to pay a tax of 4.125 cents a barrel or 4.125 percent of the market value, whichever is higher, effective May 1. Sponsors of the bill estimated that this would result in an increase of $8,536,000 in revenue. The current rate is 2.75 cents per barrel, or 2.75 percent, whichever is higher.

Natural gas, now taxed 3 percent of its value, will pay a tax of 5.2 percent, to return an estimated $700,000 in additional revenue annually. Under this section, the tax on gas cannot be less than 1/15 of 1 cent per thousand feet. This section of the bill also provides that the tax on natural condensate, that is, fluid produced without mechanical condensation, must bear the same tax as crude oil. The revised gas tax reads as follows:

Text of Gas Tax

"A tax shall be paid by each producer on the amount of gas produced within this state and on the amount of gas produced in another state and imported into this state upon the first sale thereof in intrastate commerce, equivalent to five percent of the market value of all gas including casing-head gas produced and saved within this state and all gas sold if produced in another state and imported into this state, at the market value thereof, as and when produced, or as and when imported.

"The market value of gas produced in another state and imported into this state shall be the average value at the mouth of the well of gas sold within this state as revealed by reports made to the comptroller for the quarter immediately preceding the quarter in which such gas was imported and sold. Provided, however, that the amount of

May Allowables 3 Percent Under Demand

(Barrels Daily)

STATE	Bureau of Mines Estimate of Demand	State Allowable Beginning of Month	Difference of Allowable from Demand	Percent Difference of Allowable from Demand
Arkansas	83,900	76,673	— 7,227	— 8.6
California	598,100	571,000*	—27,100	— 4.5
Kansas	213,900	217,900	+ 4,000	+ 1.9
Louisiana	320,300	320,324	+ 24	.....
Michigan	40,000	36,000†	— 4,000	—10.0
New Mexico	113,900	114,000	+ 100	.....
Oklahoma	440,000	400,000	—40,000	— 9.1
Texas	1,382,200	1,367,619‡	—14,581	— 1.0
Total 8 Prorated States	3,192,300	3,103,516	—88,784	— 2.8
Illinois	336,100	323,700§	—12,400	— 3.7
Other States	271,300	.....	.....	.....
TOTAL UNITED STATES	3,799,700	.....	.....	.....

* Recommendation of Conservation Committee of California Oil Producers.

† Estimate of actual production that will occur under prescribed regulations.

‡ Texas State Railroad Commission's estimate of actual net daily production allowing for usual underproduction of 3½ percent under net allowable, which at the beginning of May is calculated at 1,417,222 barrels daily. However, allowable normally increases as new wells are completed. Under May order, most Texas fields were ordered shut down May 3, 4, 10, 11, 17, 18, 24, 25 and 31. Texas Panhandle was ordered shut down May 10, 17, 24 and 31.

§ Average level to which unprorated Illinois production had naturally declined for 4 weeks ended April 26, 1941.

the tax on sweet and sour gas shall never be less than one-fifteenth (1/15) of one cent per thousand cubic feet on sweet and sour gas sold or produced and saved in this state, and not thereafter lawfully injected into the earth in the state of Texas for the following purposes: (a) storage thereof; (b) recycling; (c) repressuring; (d) lifting oil and not thereafter (e) lawfully vented or flared in connection with the production of oil.

"The market value of gas produced in this state shall be the value thereof plus any bonus, or premium, or anything of value paid therefor; or any sum of money that such gas will reasonably bring if produced and sold in accordance with the laws, rules and regulations of this state, provided that notwithstanding any other provision herein to the contrary, where gas is processed for its liquid hydrocarbon content and the residue gas is returned by recycling methods to the same gas producing formation underlying the land from which the gas is produced, the value of such gas shall be three-fifths (3/5) of the value of the products extracted, separated and saved from such gas.

"In case gas is sold for cash, the tax shall be computed on the producers' gross receipts of such sale, and in case the whole or a part of the consideration for the sale of gas is a portion of the products extracted from such gas, the tax shall be computed on the gross value of the products received plus all other things of value received by the producer, except in case of gas processed by recycling operations.

"In determining the market value of gas for the purpose of computing the tax due, there shall be excluded the value of residue gas lawfully injected into the earth in the state of Texas for the following purposes:

"(a) storage thereof; (b) repressuring; (c) lifting oil; and also (d) gas lawfully vented or flared in connection with the production of oil; save and except, however, if any gas so injected into the earth is sold for such purposes, then the market value of the gas so sold shall not be excluded in computing the tax."

Tax on Carbon Black.

Franchise taxes are increased to $1 for each $1000 of capitalization. It is estimated that this will raise $2,350,000 a year.

A new carbon black tax is provided, expected to raise $179,000 a year. This section reads, in part, as follows:

"On Class A carbon black, 1/10 of 1 cent per pound or 4 percent of the value when value is 4 cents per pound or more; on Class B carbon, ⅛ of 1 cent per pound or 5 percent of value where value is 4 cents per pound or more."

Under Article 18 of the bill, a tax of 2.2 percent of the gross receipts on oil well cementing has been inserted, and it is estimated that this will raise $200,000 a year. This is a new tax.

By rewriting the motor fuel enforcement section of the law, increasing diesel engine fuel taxes to 8 cents a gallon, the sponsors estimated that income from this source would be increased $1,000,000 a year.

The bill exempts from the chain store tax all filling stations where 75 percent or more of the gross proceeds are derived from the sale of petroleum products.

Other sections of the bill increased annual taxes as follows: sulphur, $536,000; telephones, $83,000; utilities, $154,000; retail sales tax of one percent on automobile paper, $3,000,000; increase of the liquor tax to bring $1,300,000; liquor prescription tax, $1,540,000; sales tax on cosmetics, radios and playing cards, $300,000, and application of intangible taxes to motor carriers, $200,000. The latter tax has applied heretofore to railroads.

There is a tax of 3 cents on each share of stock exchanged, expected to raise $250,000 a year.

Of the $22,000,000 to be raised, $5,147,000 would go to the general revenue fund, $11,250,000 to the pension fund, $750,000 to the highway fund, $3,100,000 to the teachers retirement fund, $400,000 to the blind, and $1,500,000 to needy children. The school fund would be decreased by $63,000.

Associations

Scouts Convention Will Hear Pogue and Pew

Members of the National Oil Scouts and Landmen's Association, holding their annual convention in Dallas May 29-31, will hear discussions on "The Petroleum Outlook" by Joseph E. Pogue, vice president of Chase National Bank, New York, and on "The Petroleum Outlook" by J. G. Pew, Sun Oil Company, Philadelphia.

The first convention day is being devoted to registration; meetings of officers, directors and convention committees; a cocktail party for members, ladies and guests, and dinner and dancing at the Adolphus Hotel Century Room.

C. J. Bradley, The Texas Company, Tyler, association president, will preside at the morning session of the second day, May 30, and at this session Pogue and Pew will speak. A golf tournament will be held at Lakewood Country Club that afternoon, and a stag party is scheduled for the evening.

E. R. Albert, Jr., Baroid Sales Division, Tulsa, will discuss "Well Logging" at the morning session May 31, after which election of officers will be held. A bridge party for ladies will be held early in the afternoon, with a barbecue for members and guests later in the afternoon at the home of D. Harold Byrd. The annual dance will be held in the evening at the Adolphus Hotel Ballroom.

Phillips and Ratner on API Mid-Year Program

Governor Leon C. Phillips of Oklahoma and Governor Payne Ratner of Kansas will be guest speakers before the eleventh mid-year meeting of the American Petroleum Institute, scheduled for May 19-22 at Tulsa. They will address the luncheon and general session Wednesday noon, May 21.

Sessions of the Division of Production and the Division of Refining, and meetings of more than 75 committees, will occupy attention of oil men planning to attend the four-day event.

The first two days are being given over entirely to meetings of committees, with group sessions to begin Wednesday, May 31. The Division of Production will hear papers on drilling practice, including pressure core analysis and mud-circulating systems, during the morning session, while the division's Central Committee on Drilling and Production Practice will hold sessions for members of its executive and program committees during the afternoon.

Plans are underway for an informal dinner and entertainment at the Tulsa Coliseum Wednesday evening, with the Tulsa oil and supply fraternity as hosts.

On Thursday morning, the Division of Production will consider depth-pressure data, chemical treatment of oil sands, and will review gravel-packing methods, and during the afternoon session will discuss production technology and materials.

The semi-annual meeting of the institute's board of directors will be held Wednesday morning.

The Southern Hills Country Club will be the scene of the mid-year golf tournament for the J. Edgar Pew Trophy. Participants will play each afternoon, with the tournament to conclude with the golf banquet Thursday night, May 22, in the roof garden of the Tulsa Club.

This year's mid-year meeting is the first to be held at Tulsa since 1936, and the fifth occasion it has been held in that city.

Pipe Lines

Report Pending Sale of Fort Worth Plant and Line

Negotiations on the part of Texas and Louisiana interests for purchase of The Ohio Oil Company's refinery at Fort Worth and the Illinois Pipe Line Company's line from Fort Worth to the Ranger area were reported underway last week. It is understood that if the deal is completed a combination of Cotton Valley and Ranger crudes will be treated at the Fort Worth plant.

Noelke Pipe Line Takes Over Short West Texas Oil Line

Noelke Pipe Line Company has been formed by George T. Kimbell, Wichita Falls, and associates to operate the 8-mile 3-inch crude line built from the Soma-Noelke pool, West Texas, to Iraan pump station, near Yates field, on The Texas-New Mexico Pipe Line Company's 12-inch carrier. The pool outlet began pumping oil April 28, with The Texas Company agreeing to purchase 500 barrels daily.

Propose Panhandle-Colorado Four-Inch Gasoline Line

Construction of a motor fuel product line from the Texas Panhandle to Lamar, Colorado, involving about 200 miles of 4-inch welded line, is contemplated by Jack Moffett of Blackwell, Oklahoma, American Oil & Gas Company, and other interests. N. B. Shaw, of Casper, Wyoming, an official of American Oil & Gas Company, is supervising the purchase of right-of-way options for the proposed carrier, which is scheduled to originate near Borger, extending west to the Sunray-Dumas producing and refining area, Moore County, thence northwest across Sherman Coun-

ty, Texas, and Cimarron County, Oklahoma, to the Colorado terminal.

Identity of the Panhandle refining units that will make use of the interstate line has not been disclosed, although negotiations have been carried on with Shamrock Oil & Gas Corporation, which produces 3000 barrels of natural gasoline daily and processes 2800 barrels of crude daily at its combination plant near Sunday, and Danube Oil Corporation, owner of a small refinery near Borger.

Indiana Standard Awards Contract for 2 Gasoline Lines

Standard Oil Company (Indiana) awarded construction contracts for two lines to extend from the company's Sugar Creek-Council Bluffs gasoline trunk line. Williams Brothers Corporation was awarded contract for a 109-mile 6-inch section to extend from Burlington Junction, Missouri, to Des Moines, Iowa. Contracts for laying 168 miles between Council Bluffs, Iowa, and Sioux Falls, South Dakota, were divided between Ray L. Smith Contracting Company and Jones & Brooks, Inc., with the former to lay the section between Bronson and Council Bluffs, Iowa, while the latter will work between Bronson and Sioux Falls.

Construction at the Burlington Junction began May 1, and Jones & Brooks, Inc., was to begin approximately the same time at Sioux Falls.

Only one pumping station will be required, and its tentative location is Council Bluffs.

Award Contract for 16-Mile Michigan Crude Oil

Leonard Pipe Line Company has awarded contract to H. L. Gentry Engineering Company, Jackson, Michigan, for construction of 16 miles of 4-inch line to parallel a 4-inch line between the company's stations at Crystal and Alma, Michigan.

The loop will increase capacity and permit delivery of both Illinois and Michigan crude to Alma refineries.

Consider Pipe-Line Outlet For McKamie Field, Arkansas

Louark Producing Company is considering construction of a pipe line from Dorcheat, Columbia County, Arkansas, to McKamie, LaFayette County. The company has stated it is considering laying a line from Magnolia, Columbia County, to McKamie, via Dorcheat, if and when production at McKamie warrants. At present, the company is buying McKamie distillate and hauling it in trucks.

Mississippi Oil Moves North

Allied Pipe Line Company, subsidiary of Allied Oil Corporation, owner of a 3500-barrel refinery at St. Elmo, Illinois, is installing a crude gathering system in the south portion of the Tinsley field, Mississippi. The line will connect with a 10-car capacity rack, and make deliveries to the St. Elmo plant.

Union Producing Company has contracted to sell 3000 barrels daily of its Tinsley field production to Standard Oil Company of Ohio's Latonia, Kentucky, refinery. Deliveries will be made by tank cars.

Washington

Monopolistic Charge Hit by Commerce Official

Findings of the Department of Justice monograph on the oil industry, prepared for the Temporary National Economic Committee, that some 20 large operators dominated the whole field of petroleum in this country are "inaccurate, incomplete, and ex parte," members of the House appropriations committee were told by John W. Frey of the Petroleum Conservation Division of the Department of Commerce, during hearings on the department's appropriation bill for the fiscal year 1942.

Refusing to take advantage of permission granted by the committee to have his remarks "off the record," Frey insisted that they were "on the record" and declared that "no group of companies by collusion dominate the entire price structure of the United States."

"Price structures," he said, "are the result of the interplay of all the forces."

Accompanied by Frey, associate director for marketing and refining, and Jack W. Steele, chairman of Federal Tender Board No. 1, George W. Holland, director of the Petroleum Conservation Division, outlined the activities under the Connally Act. While the division has an appropriation of $255,000, it does not expect to expend more than $240,000, and the latter amount was provided in the bill for 1942.

During his testimony, Holland was asked by Representative Harry R. Sheppard how much money was spent "for the purpose of confiscating the tide lands of the great state of California."

"Not a nickel of it," Holland declared.

Bottlenecks in Oil Industry Unlikely, Chamber is Told

"No industy of comparable importance to defense has so few even potential bottlenecks as the petroleum industry," members of the United States Chamber of Commerce were told by Dr. Robert E. Wilson, oil consultant of the Office of Production Management, April 30 at the oil industry "round table" which featured the chamber's annual meeting.

Recent state-by-state estimates indicate that, without any excessive drilling programs, production could be increased by 30 percent and maintained at that level for at least two years without any major new discoveries," he declared in reviewing the position of the industry.

"Of course," he added, "the industry must not relax its normal activity toward making new discoveries, but it should avoid unnecessary drilling and unsound well-spacing programs which use up capital, labor and steel to no useful purpose. New wells and fields must be discovered and connected up and new pipe lines built as old fields decline. I am sure that if our producers are given freedom of opportunity, subject to the limitations of sound proration regulations, they will see that every possible demand is met for many years to come."

The immediate expansion of output to meet sharp increases of demand is not quite as great in refining as in production, he told the meeting, but our civilian demand is so large that it still dwarfs every possible military demand, although a few special products require special attention.

"It would be possible, by rather moderate methods of reducing civilian consumption, to meet all military demands without any increase in refinery operations," Wilson explained, "but the petroleum industry would not consider that it had done its duty by its country or its customers if this had to happen."

The most serious possible bottleneck in the industry is in tanker transportation facilities on the East Coast. About 25 large tankers are due for completion this year and 50 are to be constructed in 1942, but in view of the possibility that interference with tanker transportation on the East Coast might coincide with emergency demands, the OPM has recommended to the industry the development of all possible supplemental methods of transportation.

Speaking on the importance of an integrated industry, Paul G. Blazer, president of the Ashland Oil & Refining Company, called attention to legislation which has been proposed which would divorce the various activities of the oil industry which, if enacted, would lose to the public much of the savings which have been accomplished by the oil companies.

"The present effort to break up the large oil companies into smaller non-affiliated corporations, each performing a different function, is contrary to the interests of the consuming public," he asserted, "and conceivably might cause such disruption of long established methods of operation as to interfere disastrously with our national defense program. Aside from all other considerations, such a novel experiment, involving drastic changes in management in a vital defense industry, constitutes an unnecessary risk."

Financial

Union and California Standard Report Increased Profits

First-quarter earning statements of Union Oil Company of California and Standard Oil Company of California reflected improved profit showings over the corresponding 1940 period, and may be considered indicative of profit trends among major units operating in the Pacific Coast territory.

Union Oil Company reported net profit of $1,273,006 for the three months ended March 31, 1941, equal to 27 cents a share on 4,666,270 capital shares outstanding, as compared with $766,148, or 16 cents a share in the same 1940 period. Standard Oil Company profit totaled $4,799,184, equal to 37 cents a share on 13,003,853 capital shares, compared with $4,534,623, or 35 cents a share reported for the first quarter of 1940.

Net sales of Union Oil Company in the three months this year were placed at $17,387,580, as compared with $17,227,375 in the like period last year. The company attributed improved profits to increased domestic sales on which a greater margin is realized than on export business. Export business was substantially curtailed, but no information was released on the volume of this business. Standard Oil Company did not report sales volume in its interim showings.

Less Crude Run to Stills; Inventories Satisfactory

Desirable trends predominated in the industry's operations in the week ended April 26, latest statistics indicated. Refinery runs were cut from the all-time high level of the previous week, and crude production was brought down almost within current market demand.

Gasoline production was lowered slightly in reflection of the smaller crude runs to stills, and seasonal withdrawals from gasoline storage proceeded in normal volume. Light fuel oils went into storage, as is customary at this season. But production of heavy fuel oil again was smaller than market requirements, and nearly a million barrels came out of storage to satisfy demand stimulated by the nation's high levels of industrial and commercial activity.

Having declined 25,800 barrels to 3,726,850 daily for the week of April 26, United States oil production was only 17,550 barrels in excess of estimated daily average market demand for domestic crude in April, as calculated by the United States Bureau of Mines.

Crude runs to stills averaged 3,675,000 barrels daily, having been reduced 30,000 barrels from the record-breaking 3,705,000 barrels of the week before. The new rate was 3.1 percent above the daily average runs of 3,566,000 barrels for April of last year.

Production of gasoline was estimated by the American Petroleum Institute at 12,483,000 barrels for the April 26 week, a reduction of 91,000 barrels (13,000 daily) from the output in the previous week. The new rate was 158,000 barrels above the daily average of April last year.

Stocks of finished and unfinished gasoline in the United States came down 1,252,000 barrels within the week, having totaled 96,647,000 barrels on April 26. That quantity was approximately 7,000,000 barrels (6.7 percent) smaller than the amount of 103,587,000 barrels in storage a year previously. Furthermore, the present stocks include nearly 7,000,000 barrels of needed aviation gasoline, as compared to about 5,000,000 barrels on hand a year ago. Accordingly, stocks of ordinary gasoline represent only 89,715,000 barrels at present, compared with 98,469,000 barrels at this time last year, the inventory having been reduced 8,754,000 barrels (8.9 percent). Demand for gasoline meanwhile is running more than 10 percent above last year's trend. In terms of days' supply, at prevailing rates of consumption, therefore, present stocks are much more moderate than those of a year ago, which were excessive to the point of causing extreme weakness of the markets.

Over a million barrels of light fuel oil went into storage in the week of April 26, the stocks having risen from 28,410,000 to 29,543,000 barrels. The latter quantity was approximately 5,000,000 barrels (19 percent) larger than that on hand April 26 last year. But normal demand continues to grow, with the installation of new oil burners, and the inventory situation is satisfactory.

After having added a little heavy fuel oil to storage in the preceding week, the industry took nearly a million barrels out in the week of April 26, stocks having come down to 94,732,000 barrels. That quantity was about 8,000,000 barrels (7.6 percent) smaller than the amount of 102,513,000 barrels on hand at the corresponding time last year.

Crude oil stocks in the United States totaled 265,471,000 barrels April 19, the United States Bureau of Mines reported, having increased 311,000 barrels in the week ended on that date. The crude inventory is about 10,000,000 barrels larger now than a year ago.

Refined Oil Prices Higher; Illinois Crude Raised Again

In reflection of the continued strength of the industry's markets, prices of refined products are further advancing, having made substantial gains, the past week, and Illinois crude postings have been raised 5 cents a barrels more, within a month after being boosted 7 cents.

The second Illinois increase appeared to be of only local significance, having been induced by the continued decline of production in that state. Nevertheless, the increase strengthened the prospects for another general advance in the Mid-Continent, which is held possible because of the moderate amount of the March 29-April 1 increases, which averaged about 6 or 7 cents a barrel.

Generally encouraging has been the continued improvement of the gasoline market, prices having advanced ⅛ to ¼-cent a gallon more within the past week in the Mid-Continent and Middle Western refining districts, while quotations have risen as much as ½-cent a gallon on the Atlantic coast. Natural gasoline has advanced in price along with the refinery gasoline.

Virtually all other refined products also have further improved in price, among them having been kerosene, light fuel oil, diesel oil, heavy fuel oil and lubricants.

Increases of ⅛-cent a gallon in kerosene and light fuel oil were common, and diesel oil was quoted 5 cents a barrel higher on the Pacific Coast. The market for Pennsylvania grade lubricants continued strong, and bright stocks were marked up 1 cent a gallon by some refiners, while neutrals were similarly advanced in some instances.

The additional 5-cent advance in Illinois crude was initiated by The Ohio Oil Company and Sohio Corporation (subsidiary of Standard Oil Company of Ohio), effective April 28. The Ohio Oil Company raised Illinois basin crude from $1.22 to $1.27 a barrel and Eastern Illinois and Western Indiana crudes from $1.07 to $1.12. Sohio Corporation similarly advanced its Illinois basin posting the same day, and the increase also was met by other purchasers. Prior to the general upward movement of crude prices around April 1, Illinois basin crude was posted at $1.15 a barrel.

Tanker chartering rates from the

[*Continued on page 50*]

Trends of Operations and Changes in Stocks

Figures are from American Petroleum Institute weekly reports, except those on crude stocks, which are from Bureau of Mines weekly reports

WEEK ENDED	Crude Oil Production (Barrels Daily)	Crude Runs to Stills (Barrels Daily)	Crude Oil Stocks (Barrels)	Gasoline Stocks (Barrels)	FUEL OIL STOCKS	
					Gas Oil & Dist. Fuels	Residual Fuel Oil
1938:						
November 12	3,243,250	3,180,000	273,394,000	[6]67,551,000	34,175,000	120,491,000
December 10	3,245,100	3,150,000	[6]269,509,000	68,687,000	32,068,000	118,711,000
1939:						
April 22	3,526,700	3,280,000	277,156,000	[2]87,769,000	21,085,000	105,035,000
April 29	3,568,200	3,405,000	278,440,000	86,794,000	[7]25,844,000	[7]108,409,000
May 6	3,580,900	3,275,000	[2]278,607,000	86,216,000	26,167,000	108,597,000
August 5	[1]3,909,400	3,445,000	268,982,000	76,431,000	35,601,000	114,512,000
August 26	[1]1,690,800	3,475,000	246,982,000	73,475,000	37,722,000	116,237,000
October 7	3,435,850	3,505,000	231,564,000	[6]71,152,000	38,549,000	114,397,000
October 21	3,771,550	[2]3,650,000	[3]229,127,000	72,122,000	39,358,000	115,060,000
1940:						
January 27	3,611,600	3,470,000	237,339,000	87,914,000	27,407,000	103,015,000
February 24	3,732,100	3,490,000	240,836,000	96,719,000	25,390,000	103,419,000
March 30	3,841,250	3,585,000	250,561,000	101,370,000	23,778,000	105,081,000
April 20	3,858,550	3,535,000	254,881,000	[1]102,817,000	24,779,000	103,323,000
April 27	3,845,250	3,555,000	256,670,000	102,452,000	24,997,000	102,552,000
May 25	3,835,650	3,580,000	259,330,000	100,297,000	28,356,000	104,015,000
June 22	3,846,450	[2]3,690,000	260,891,000	97,276,000	32,751,000	104,683,000
June 29	3,639,550	3,625,000	262,059,000	95,142,000	33,590,000	104,486,000
July 27	3,690,400	3,555,000	262,579,000	90,173,000	38,981,000	105,924,000
August 31	3,501,350	3,575,000	265,865,000	85,393,000	44,766,000	108,774,000
September 28	3,799,950	3,600,000	263,609,000	82,273,000	47,986,000	108,450,000
October 26	3,640,300	3,565,000	262,746,000	80,891,000	[4]48,893,000	108,475,000
November 9	3,584,200	3,510,000	261,631,000	[6]79,847,000	48,408,000	107,687,000
November 30	3,335,050	3,510,000	262,679,000	80,284,000	46,212,000	106,618,000
December 28	3,385,500	3,585,000	261,552,000	83,274,000	42,266,000	102,620,000
1941:						
January 25	3,599,100	3,625,000	260,093,000	88,762,000	39,039,000	100,297,000
February 22	3,629,650	3,590,000	261,783,000	95,812,000	34,381,000	98,631,000
March 1	3,632,250	3,585,000	263,176,000	96,917,000	33,725,000	97,510,000
March 29	3,746,550	3,625,000	266,187,000	[2]99,727,000	29,949,000	96,152,000
April 5	3,514,300	3,600,000	265,540,000	99,112,000	28,824,000	95,371,000
April 12	3,603,650	3,630,000	265,160,000	98,654,000	28,381,000	95,471,000
April 19	3,752,650	[1]3,705,000	265,471,000	97,899,000	28,410,000	95,636,000
April 26, 1941	3,726,850	3,675,000	.....	96,647,000	29,543,000	94,732,000
April 26, 1940	3,845,250	[8]3,566,000	[4]254,881,000	103,587,000	24,758,000	102,513,000
Change in past year	—3.1%	+3.1%	+4.2%	—6.7%	+19.3%	—7.6%

[1] All time peak. [2] Peak for year. [3] Lowest since April, 1922. [4] Stocks, April 20, 1940.
[5] Lowest since October, 1922, due to shut down of six mid-continent states. [6] Lowest for year.
[7] Prior to April 29, 1939, data did not include stocks at terminals, in transit, etc., except in California.
[8] April, 1940, daily average.

GRAVITY SCALE CRUDE OIL PRICES OUTSIDE CALIFORNIA

Posted in most instances between March 29 and April 1, 1941

Gravity	Oklahoma-Kansas		North Louisiana-Arkansas					Inland Texas and New Mexico			South Texas		Texas Gulf Coast			Louisiana Gulf Coast							
	Stanolind, Gulf, Texas, Shell, Barnsdall	Carter, Magnolia	[1]Rodessa, etc.	[2]Champagnolle, etc.	Bunkie, Eola, Olla (by Standard)	Lisbon, La. (by Gulf)	[3]Atlanta, Buckner, etc., Ark.	North and West Central Texas	[4]Eastern Texas	West Texas, Panhandle, New Mexico	[5]Refugio, Type	[6]Mirando Type	[7]Gulf Coast	[8]Anahuac Type	[9]Dickinson Type	[10]Gulf Coast	[11]Standard of La.	[12]Texas Co.	[13]Texas Co.	[14]Magnolia Pet Co.	[15]Shell Oil Co.	Roanoke (by Shell)	Jennings (by Gulf)	[16]Rocky Mt. Area (Salt Creek, etc.)
17-17.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	$0.84	$0.80	$0.75	....	....
18-18.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.86	.82	.77	....	....
19-19.9	....	....	....	....	....	....	....	....	$0.73	$0.60	$0.98	$0.93	$0.96	$0.88	$0.83	$0.96	....	$0.86	....	.88	.84	.79	....	....
20-20.9	$0.75	$0.65	....	....	....	....	$0.58	$0.68	.75	.62	1.00	.95	.98	.90	.85	.98	$0.80	.88	....	.90	.86	.81	....	....
21-21.9	.77	.68	....	....	....	....	.60	.70	.77	.64	1.02	.97	1.00	.92	.87	1.00	.82	.90	....	.92	.88	.83	....	....
22-22.9	.79	.71	....	....	....	....	.62	.72	.79	.66	1.04	.99	1.02	.94	.89	1.02	.84	.92	....	.95	.91	.86	....	....
23-23.9	.81	.74	....	....	....	....	.64	.74	.81	.68	1.06	1.01	1.04	.96	.91	1.04	.86	.94	....	.98	.94	.89	....	....
24-24.9	.83	.77	$0.78	$0.76	$0.88	....	.66	.76	.83	.70	1.08	1.03	1.06	.98	.93	1.06	.88	.96	....	1.01	.97	.92	....	....
25-25.9	.85	.80	.80	.78	.90	....	.68	.78	.87	.72	1.10	1.05	1.08	1.00	.95	1.08	.90	.98	....	1.04	1.00	.95	....	....
26-26.9	.87	.83	.82	.80	.92	....	.70	.80	.89	.74	1.12	1.07	1.10	1.02	.97	1.10	.92	1.00	....	1.07	1.03	.98	....	....
27-27.9	.89	.86	.84	.82	.94	$0.71	.72	.82	.91	.76	1.14	1.09	1.12	1.04	.99	1.12	.94	1.02	....	1.09	1.05	1.00	....	....
28-28.9	.91	.89	.86	.84	.96	.73	.74	.84	.93	.78	1.16	1.11	1.14	1.06	1.01	1.14	.96	1.04	....	1.11	1.07	1.02	....	$0.86
29-29.9	.93	.92	.88	.86	.98	.75	.76	.86	.95	.80	1.18	1.13	1.16	1.08	1.03	1.16	.98	1.06	....	1.13	1.09	1.04	....	.88
30-30.9	.95	.95	.90	.88	1.00	.77	.78	.88	.97	.82	1.20	1.15	1.18	1.10	1.05	1.18	1.00	1.08	$0.97	1.15	1.11	1.06	....	.90
31-31.9	.97	.97	.92	.90	1.02	.79	.80	.90	.99	.84	1.22	1.17	1.20	1.12	1.07	1.20	1.02	1.10	.99	1.17	1.13	1.08	$0.97	.92
32-32.9	.99	.99	.94	.92	1.04	.81	.82	.92	1.01	.86	1.24	1.19	1.22	1.14	1.09	1.22	1.04	1.12	1.01	1.19	1.15	1.10	.99	.94
33-33.9	1.01	1.01	.96	.94	1.06	.83	.84	.94	1.03	.88	1.26	1.21	1.24	1.16	1.11	1.24	1.06	1.14	1.03	1.21	1.17	1.12	1.01	.96
34-34.9	1.03	1.03	.98	.96	1.08	.85	.86	.96	1.05	.90	1.28	1.23	1.26	1.18	1.13	1.26	1.08	1.16	1.05	1.23	1.19	1.14	1.03	.98
35-35.9	1.05	1.05	1.00	.98	1.10	.87	.88	.98	1.07	.92	1.30	1.25	1.28	1.20	1.15	1.28	1.10	....	1.07	....	....	....	1.05	1.00
36-36.9	1.07	1.07	1.02	1.00	1.12	....	.90	1.00	1.09	.94	1.32	1.27	1.30	1.22	1.17	1.30	1.12	....	1.09	....	....	....	1.07	1.02
37-37.9	1.09	1.09	1.04	1.02	1.14	....	.92	1.02	1.11	.96	1.34	1.29	1.32	1.24	1.19	1.32	1.14	....	1.11	....	....	....	1.09	1.04
38-38.9	1.11	1.11	1.06	1.04	1.16	....	.94	1.04	1.13	.98	1.36	1.31	1.34	1.26	1.21	1.34	1.16	....	1.13	....	....	....	1.11	1.06
39-39.9	1.13	1.13	1.08	1.06	1.18	....	.96	1.06	1.15	1.00	1.38	1.33	1.36	1.28	1.23	1.36	1.18	....	1.15	....	....	....	1.13	1.08
40 & Up	1.15	1.15	1.10	1.08	1.20	....	.98	1.08	1.17	1.02	1.40	1.35	1.38	1.30	1.25	1.38	1.20	....	1.17	....	....	....	1.15	1.10

[1] Gulf schedule for Caddo, Homer, Haynesville, Bull Bayou, Crichton, De Soto, El Dorado and Rodessa, Texas. Standard of La. schedule for Cotton Valley, Rodessa, Shreveport (Cross Lake). Magnolia schedule for Haynesville, Cotton Valley, Rodessa, and Miller Co., Ark. Texas Co. schedule for "North Louisiana."

[2] Schedule of Standard of La. for Caddo, De Soto, Sabine, Fouke, Homer, Miller Co., Sugar Creek. Schedule of Root Petroleum Co. for Nick Springs, Urbana light, Schuler sweet, Rainbow, South Field (El Dorado), and Champagnolle.

[3] Schedule of Standard of La. for Atlanta, Buckner, Magnolia, Schuler: Jones sand, Village. Schedule of Root Petroleum Co. for Schuler: Reynolds lime, and Schuler: Jones sand.

[4] Humble schedule for Anderson, Cherokee, Limestone, and Navarro counties and Navarro Crossing field and for Hawkins field, Wood Co. Rodessa, Texas, prices are same as in Rodessa, La.-Ark.

[5] Schedule for Refugio, E. White Point, Greta, Melon Creek, Midway, Minnie Bock, O'Connor-McFaddin, Plymouth, Saxet, Taft, and Tom O'Connor.

[6] Schedule for Blanchard, Bridwell, Colorado, Comitas, Eagle Hill, Escobas, Fitzsimmons, Glen, Government Wells (N. and S.), Heyser, Hoffman, Kelsey, Kohler, Loma Novia, Lundell, Manila, Mirando Valley, Placedo, Randado, Sarnosa, and Tesoro.

[7] Humble schedule for Amelia, Clear Lake, Goose Creek, Hastings, Magnet, Mykawa, Mykawa new, Raccoon Bend, South Thompsons, Sugarland, Thompsons, Webster. Texas Co. schedule for Arriola, Ganado, Hamman, Hillje, Humble, Kubela, Magnet, Manvel, Markham, Mauritz, Old Ocean, Pickett Ridge, Port Neches, Sour Lake, West Columbia, Withers. Stanolind schedule for Hastings, Clinton, South Houston. Gulf schedule for Spindle Top, Sour Lake, Lovells Lake, West Beaumont, Goose Creek, South Liberty, Big Creek, Blue Ridge, Fannett, Moore, Barbers Hill, Hankamer, Thompsons, Lochridge, Dyersdale, and Hull (old) crudes. Sun schedule for Barbers Hill, Batson old, Cotton Lake, Esperson below 35 gravity, Goose Creek, Greens Lake, Hull below 25, Humble below 35, Nome, North Dayton below 25, Orange, Saratoga, Sour Lake, South Liberty.

[8] Humble schedule for Anahuac, Angleton, Cedar Point, Fishers' Reef, Hull old and new, Pierce Junction, Red Fish Reef, Turtle Bay fields. Sun schedule for Anahuac, Caplen, and Turtle Bay. Gulf schedule for Anahuac, Hull new, Pierce Junction, Orange and Thompsons deep.

[9] Humble schedule for Dickinson, Gillock, Hardin, League City, and Rowan fields. Stanolind schedule for Fairbanks, North Houston, and Rosslyn.

[10] Sun Oil Co. schedule for Bayou Blue, Chacahoula, Fausse Pointe, Hackberry (E. and W.), and Vinton. Texas Co. schedule for Bay St. Elaine, Caillou Island, Iberia, Lake Barrek, Lake Pelto, Leesville, Port Barre. Gulf schedule for Edgerly, Starks, Vinton, E. Hackberry, Cameron Meadows, Leesville, Timbalier Bay, Grand Bay, Quarantine Bay, and West Bay. Deduct 2 cents from these postings for Standard of La. prices for University (Baton Rouge) crude of 30 to 35.9 gravity.

[11] Standard of La. schedule for Bayou Mallet, Choctaw, Darrow, Jeanerette, Lirette, N. Crowley, S. Crowley, Port Barre, Potash, Roanoke, St. Martinville.

[12] Texas Co. schedule for Bateman Lake, Dog Lake, Gausse Point, Horseshoe Bayou, Jefferson Island, Plumb Bob, Vermilion Bay, West Cote Blanche.

[13] Texas Co. schedule for Delta Farms, Golden Meadows, Lake Salvador.

[14] Magnolia schedule for Lockport, Cameron Meadows, West Gueydan.

[15] Shell Oil Co. schedule at Iowa and beginning with below 20 gravity 84 cents at Black Bayou and White Castle.

[16] Stanolind schedule for Salt Creek except Tensleep, Midway, and Dutton Creek, Wyoming, posted 10-11-38. Continental Oil Co. schedule for Ft. Collins and Wellington, Colorado, posted 4-1-41.

Mid-Continent Flat Prices

FIELD—	Flat Price	Date Posted
Arkansas:		
Big Creek, Dorcheat, McKamie	$1.05	4- 1-41
Smackover, Heavy	.76	4- 1-41
Louisiana, North:		
Cotton Valley Distillate	1.20	4- 1-41
Cotton Valley (Holloway Sand)	1.15	4- 1-41
Urania	1.05	4- 1-41
Louisiana, South:		
Erath	1.11	4- 1-41
Garden Island	1.26	4- 1-41
Gibson	1.09	4- 1-41
Happytown	1.05	4- 1-41
Lafitte, Paradis	1.09	4- 1-41
Lake Arthur & Tepetate	1.08	4- 1-41
Lake Mongoulois	1.26	4- 1-41
Ville Platte	1.10	4- 1-41
Texas:		
Alice, Benavides (N. Sweden) Ben Bolt, Clark-Muil, Sun and Tom Graham	1.25	4- 1-41
Alfred-Magnolia City	1.15	4- 1-41
Cayuga	.85	4- 1-41
Clay Creek	.90	4- 1-41
Cleveland	1.16	4- 1-41
Clinton	1.38	4- 1-41
Conroe	1.33	4- 1-41
Darst Creek	1.04	4- 1-41
East Texas, Flag Lake	1.15	4- 1-41
Flour Bluff, East Flour Bluff, Jim Wells County	1.23	4- 1-41
Hockley	1.25	4- 1-41
Hockley-Cochran Counties	.77	4- 1-41
Livingston, Cleveland	1.15	4- 1-41
Long Lake	1.13	4- 1-41
Luling	.95	4- 1-41

(Continued in next column)

Mid-Continent Flat Prices (Cont'd)

FIELD—	Flat Price	Date Posted
Texas (continued):		
Lytton Springs	1.07	4- 1-41
North Rincon	1.25	4- 1-41
Pettus	....	.....
Salt Flat, North Salt Flat, Darst Creek, Hilbig, Carroll, Clark, Zoboroski	1.04	4- 1-41
Satsuma, Tomball	1.30	4- 1-41
Seabreeze, Willow Slough, S. Esperson, W. Orange, S. China (Sun Co.)	1.15	4- 1-41
South Cotton Lake	1.25	4- 1-41
Sun	1.25	4- 1-41
Talco	.72	4- 1-41
Van	.98	4- 1-41
Yates (Deep)	.85	4- 1-41
Yates (Shallow)	.72	3-29-41

Michigan Prices

Central (Basin)		
Porter, Greendale, Crystal, Wise, Midland, Vernon	$1.27	4- 1-41
Buckeye, Edenville, Bentley, Beaverton	1.25	4- 1-41
Freeman, Lincoln, Sherman, Redding	1.22	4- 1-41
Arenac, Clayton, Ogemaw, W. Branch	1.07	4- 1-41
Southwest (Shallow):		
Allegan, Bloomingdale, Grand Rapids, Ottawa	1.28	4- 3-41
Monroe, Osceola, Temple, Winterfield	1.22	4- 3-41
Adams-Arenac	1.10	4- 1-41
Clare City	.96	4- 3-41

Middle West Prices

FIELD—	Flat Price	Date Posted
Lima, Ohio	$1.05	4- 1-41
Illinois Basin (Sohio Corp.)	1.27	4-28-41
Lake Centralia-Salem, Illinois	1.27	4-28-41
Eastern Ill-Western Ind.	1.12	4-28-41
Western Kentucky	1.15	4- 1-41
Birk City, Western Kentucky	1.15	4- 1-41
Kentucky River, Eastern Ky.	1.20	8-21-40
Big Sandy River, Eastern Ky.	1.12	8-21-40

Rocky Mountain States Prices

Colorado:		
Canon City and Florence	$0.95	4- 1-41
Iles	.97	4- 1-41
Montana:		
Cat Creek	1.15	4- 1-41
Cut Bank	1.00	1- 1-40
Sunburst	.90	11-16-37
New Mexico:		
Artesia	.77	10-11-38
Hogback	1.00	10-11-38
Wyoming:		
Big Muddy	1.03	4- 1-41
Byron	.55	10-11-38
Dry Creek	.92	10-11-38
Elk Basin	.90	10-11-38
Frannie, Light	.65	4- 1-41
Frannie, Heavy	.42	10-11-38
Garland	.50	10-11-38
Grass Creek, Light	.90	10-11-38
Grass Creek, Heavy	.45	4- 1-41
Hamilton Dome	.40	4- 1-41
Lance Creek (Ohio Oil Co.)	.82	4- 1-41
Lance Creek (Stanolind)	.77	6- 5-39
Mill Creek	.72	10-11-38
Oregon Basin	.40	4-20-40
Osage	1.30	10-11-38
Poison Spider	.59	10-11-38
Rock River	1.05	4- 1-41
Tensleep	.6515	2- 1-41

Eastern States Crude Oil Prices

FIELD—	Flat Price	Date Posted
Bradford-Allegany	$2.40	4-23-41
Sw. Pa. Pipe Line	2.05	4-23-41
Eureka Pipe Line, W. Va.	1.99	4-23-41
Corning Grade, Ohio	1.17	4- 1-41
Buckeye Crude, Ohio	1.55	7-12-40

Oil Production Taxes

In all states other than Texas, levies are severance taxes, collected in lieu of all other taxes, with exception of small special assessments made in Louisiana and Oklahoma, as shown below.

In Texas, any political subdivision as well as the state has power to tax, and state itself levies special taxes in addition to gross production tax, as shown below.

Arkansas—2.6 percent of gross market value.

California—.66443 mills per barrel of oil produced and 17.39 cents an acre on proved lands.

Louisiana—From 4 to 11 cents a barrel, depending upon gravity, average being 7½ to 8 cents; in addition, special taxes may be levied on well equipment, bringing total tax to average around 8¾ cents a barrel.

Montana—Two percent of gross value at well and ⅜ of 1c per barrel.

New Mexico—Severance tax of 2 percent on oil and gas.

Oklahoma—Five percent of gross value less royalty interests; in addition, surplus warehouse stocks may be taxed by counties.

Texas—Gross production tax is 2¾ cents a barrel or 2¾ percent, whichever is higher, and averaged 2.94 cents in 1939. In that year, total tax on average barrel produced was, however 9.23 cents, having included following levies: gross receipts 0.14 cents, regulatory 0.19 cents, state ad valorem 0.98 cents, franchise 0.06 cents, other state taxes 0.62 cents, and local ad valorem 4.30 cents.

Wyoming—Production tax based upon state and county assessments.

Tanker Plans May Affect Domestic Situation

Effect of making 50 tankers available for Britain is not immediately apparent. However, a shortage of such vessels has existed for some time, due in part to transfer of nearly 40 American ships to Panama registry early in the war, and the new program will further aggravate the domestic tanker situation. It is thought many vessels which have been operating between the Gulf Coast and either Caribbean ports or the East Coast will be lost from this service, a loss that would hinder the movement of the enormous volumes moved via water between these points.

An easing of the situation might result if government legislation now being discussed in Washington permits the use of idle ships in American ports recently seized from belligerent nations. The release of the 35 or 40 tankers in this group would ease the strain on United States domestic crude shipment requirements materially.

It is understood that the Maritime Commission will likely use the desired 50 tankers to carry oil from Gulf Coast and Caribbean ports as far as Canada in order to expedite shipment to Britain. Cargoes would be transferred at that point to British vessels.

Short Oklahoma Line

Howard J. Sherman and associates have completed a short 4-inch crude oil line from Hobart pool, Kiowa County, Oklahoma, to a loading rack at Hobart. Stanolind Oil Purchasing Company is taking the crude by tank cars from Hobart to their Tribbey station, to be put into the line at that point.

Major Crude Oil Price Changes

	Penna. Grade	Mid-Cont. (36 Gr.)	Calif. (26 Gr.)
Sept. 6, 1933	Up 10	Up 10	Up 15
Sept. 8, 1933	.....	Up 15	.....
May 1, 1934	Up 10	.....	.....
Nov. 6, 1934	Cut 25	.....	.....
Dec. 6, 1934	Cut 25	.....	.....
Jan. 4, 1935	Up 15	.....	.....
Feb. 4, 1935	Up 15	.....	.....
May 16, 1935	Cut 15	.....	.....
June 26, 1935	Cut 15	.....	.....
July 16, 1935	Cut 10	.....	.....
Aug. 29, 1935	.....	.....	Cut *1
Sept. 6, 1935	Up 5	.....	.....
Oct. 29, 1935	Up 15	.....	.....
Nov. 1, 1935	.....	.....	Up *28
Nov. 18, 1935	Up 15	.....	.....
Dec. 6, 1935	.....	.....	Up *9
Jan. 9, 1936	.....	Up 10	.....
Jan. 13, 1936	Up 15	.....	.....
Mar. 7, 1936	.....	.....	Up *18
Dec. 28, 1936	Up 12	.....	.....
Jan. 28, 1937	.....	Up 12	.....
Feb. 24, 1937	Up 10	.....	.....
June 7, 1937	Up 15	.....	.....
Sept. 1, 1937	Cut 22	.....	.....
Oct. 12, 1937	Cut 25	.....	.....
Dec. 1, 1937	Cut 15	.....	.....
Mar. 7, 1938	Cut 17	.....	.....
June 13, 1938	Cut 25	.....	.....
Sept. 1, 1938	Cut 12	.....	.....
Oct. 11, 1938	.....	Cut 20	.....
Jan. 21, 1939	Up 12	.....	.....
Feb. 2, 1939	Up 8	.....	.....
Mar. 6, 1939	Up 12	.....	.....
Oct. 6, 1939	Up 25	.....	.....
Nov. 1, 1939	Up 15	.....	.....
Dec. 1, 1939	Up 10	.....	.....
Jan. 1, 1940	Up 25	.....	.....
Feb. 1, 1940	.....	.....	Cut *7
May 22, 1940	Cut 25	.....	.....
June 18, 1940	Cut 25	.....	.....
July 12, 1940	Cut 25	.....	.....
Aug. 28, 1940	Cut 15	.....	.....
Nov. 12, 1940	Up 15	.....	.....
Dec. 17, 1940	Up 15	.....	.....
Jan. 27, 1941	Up 15	.....	.....
April 1, 1941	.....	Up 5	.....
April 23, 1941	Up 10	.....	.....
April 24, 1941	.....	.....	Up *6

* Signal Hill 26 gravity.

CRUDE OIL PRICES IN CALIFORNIA

Prices per barrel in field, posted by Standard Oil Company of California, effective April 24, 1941
All gravities above those quoted take highest price offered in that field

Gravity	Signal Hill (Long Beach)	Wilmington	El Segundo	Seal Beach	Huntington Beach	Inglewood	Playa del Rey	Olinda, Brea, Canon	Athens-Rosecrans	Torrance	Richfield	Whittier East Coyote (La Habra)	Montebello	West Coyote Hills	Santa Fe Springs	Newhall, Kern River, Kern Front, McKittrick, Round Mountain	Greeley, Canal, Wasco	Coles Levee	Mountain View	Elk Hills, Buena Vista Hills, Midway-Sunset, Lakeview Area	Lost Hills	Coalinga	Kettleman Hills	Elwood Terrace
14-14.9	.....	$0.63	.....	.....	$0.65	.....	.....	$0.65	.....	$0.66	$0.65	$0.65	$0.67	.....	.....	$0.68	.....	.....	.....	$0.68	$0.68	$0.68	.....	.....
15-15.9	.....	.64	.....	.....	.68	$0.70	.....	.65	.....	.67	.65	.66	.67	.....	.....	.....	.....	.....	.....	.68	.68	.68	.....	.....
16-16.9	.....	.65	$0.73	.....	.70	.73	.....	.66	.....	.69	.66	.68	.67	.....	.....	.....	.....	.....	.....	.68	.68	.68	.....	.....
17-17.9	.....	.68	.75	.....	.73	.76	.....	.68	.....	.70	.68	.71	.67	.....	.....	Wheeler Ridge	.....	.....	.....	.68	.72	.68	.....	.....
18-18.9	$0.74	.71	.77	.....	.75	.79	.....	.71	.....	.72	.71	.74	.67	.....	.....		.....	.....	.....	.72	.75	.68	.....	.....
19-19.9	.78	.75	.80	.....	.79	.82	.....	.75	.....	.75	.73	.77	.68	.....	.....	.....	.....	.....	$0.68	.75	.78	.68	.....	.....
20-20.9	.82	.80	.84	.....	.83	.86	$0.75	.79	.....	.79	.76	.81	.70	.....	.....	.....	.....	.....	.70	.79	.81	.70	.....	.....
21-21.9	.86	.85	.88	.....	.87	.89	.79	.82	.....	.84	.79	.85	.74	.....	.....	.....	.....	.....	.73	.84	.84	.73	.....	.....
22-22.9	.90	.89	.91	$0.77	.91	.92	.82	.86	.....	.88	.83	.89	.78	.....	.....	$0.71	.....	.....	.76	.88	.87	.77	.....	.....
23-23.9	.94	.93	.94	.83	.94	.95	.....	.89	.....	.93	.88	.93	.82	.....	.....	.74	.....	.....	.80	.93	.90	.80	.....	.....
24-24.9	.97	.97	.98	.88	.98	.98	F.O.B.	.93	.....	.97	.92	.97	.86	$0.93	.....	.77	.....	.....	.84	.97	.93	.83	.....	.....
25-25.9	1.01	1.02	1.02	.94	1.02	1.01	Our	.97	.....	1.00	.96	1.01	.90	.96	.....	.....	.....	.....	.88	1.01	.95	.86	.....	.....
26-26.9	1.05	1.06	1.05	.99	1.05	1.04	Pipe	1.01	.....	1.03	1.01	1.05	.94	1.00	.....	.....	.....	.....	.91	1.06	.98	.89	.....	.....
27-27.9	1.09	1.10	1.08	1.04	1.09	1.08	Line	1.04	.....	1.07	.....	1.09	.98	1.04	.....	.....	.....	.....	.95	1.10	1.01	.92	.....	.....
28-28.9	1.13	1.14	1.11	1.08	1.12	1.11	.....	1.07	.....	1.10	.....	.....	1.01	1.07	$1.01	.....	.....	.....	.99	1.14	1.04	.95	.....	.....
29-29.9	1.16	1.17	.....	1.13	1.15	1.14	.....	.....	$1.10	.....	.....	.....	1.05	1.11	1.05	.....	.....	.....	1.02	1.19	1.06	.97	.....	.....
30-30.9	1.20	1.21	.....	.....	1.19	1.17	.....	.....	1.15	.....	.....	.....	1.08	1.15	1.09	.....	$0.95	$1.03	1.05	1.23	1.09	1.00	.....	.....
31-31.9	.....	.....	.....	.....	.....	1.20	.....	.....	1.19	.....	.....	.....	1.12	1.18	1.13	.....	.99	1.06	1.09	.....	.....	1.02	.....	F.O.B.
32-32.9	.....	.....	.....	.....	.....	.....	.....	.....	1.24	.....	.....	.....	1.16	1.22	1.17	.....	1.02	1.09	1.12	.....	.....	1.05	.....	Ship
33-33.9	.....	.....	.....	.....	.....	.....	.....	.....	1.28	.....	.....	.....	1.20	.....	1.21	.....	1.05	1.12	.....	.....	.....	1.07	.....	$1.19
34-34.9	.....	.....	.....	.....	.....	.....	.....	.....	1.32	.....	.....	.....	1.25	.....	1.25	.....	1.09	1.15	.....	.....	.....	1.10	.....	1.23
35-35.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.30	.....	.....	.....	1.12	1.18	.....	.....	.....	.....	$1.19	1.26
36-36.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.34	.....	.....	.....	1.16	1.21	.....	.....	.....	.....	1.23	.....
37-37.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.39	.....	.....	.....	1.19	.....	.....	.....	.....	.....	1.26	.....
38-38.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.43	.....	.....	.....	1.22	.....	.....	.....	.....	.....	.....	.....
39-39.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.47	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
40-40.9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Wholesale Prices of Refined Products in Principal Markets

REFINED GASOLINE	Range Last Week (Cents a gal.)		Changes from Week Before	
Oklahoma Refineries:				
60 Octane and under	4½	4¾	...	+¼
63-66 Octane	4¾	5	+⅛	+⅛
72-74 Octane	5	5⅜	...	...
Mid-Western Tank Car:				
60 Octane and under	4¼	4⅜	...	+¼
63-66 Octane	4	5	+⅛	+⅛
72-74 Octane	5	5⅜	...	...
New York Harbor:				
68-70 Octane	7	7	+½	+½
72-74 Octane	7	7½	+½	+½
Gulf Coast:				
60 Octane unleaded	5	5	+⅛	—⅛
65 Octane unleaded	5	5¼	...	...
72-74 Octane leaded	5¼	5⅜	...	...
NATURAL GASOLINE				
Grade 26-70:				
F.O.B. Group 3	3¼	3¼	+¼	+¼
F.O.B. Breckenr'ge, Tex.	3	3	+¼	+¼
KEROSENE				
Oklahoma Refineries:				
41-43 water white	4	4½	...	...
42-44 water white	4¼	4¾	...	+⅛
Mid-Western Tank Car:				
41-43 water white	4¼	4½	...	...
42-44 water white	4¼	4¾	...	+⅛
New York Harbor	5⅛	5⅛	+⅛	+⅛
RANGE OIL				
At Oklahoma Refineries	3⅞	4⅛	...	...
In Mid-Western Market Group 3, basis	3⅞	3⅞	...	...
LIGHT FUEL OILS				
Oklahoma Refineries:				
No. 1 straw	3⅝	3⅝	...	...
No. 3	3¼	3⅜	...	...
Mid-Western Tank Car:				
No. 1 white	3⅜	4	...	...
No. 3	3¼	3⅜	...	...
New York Harbor:				
No. 1	5⅛	5¼	+⅛	+⅛
No. 3	4⅞	4⅞	+⅜	...

HEAVY FUELS	Range Last week (Per Bbl)		Changes from week Before	
Oklahoma Refineries:				
No. 6	$0.70	$0.70	...	...
Mid-Western Tank Car:				
No. 5	.75	.85	...	...
No. 6	.70	.75	...	...
New York Harbor:				
No. 5	1.55	1.65	—.10	...
No. 6	1.25	1.35	—.10	...
BUNKER C FUEL OIL				
(Per barrel, ships' bunkers)				
Gulf Coast	$ .85	$ .90	...	...
New York Harbor	1.35	1.35	...	...
DIESEL OIL				
(Per barrel, ships' bunkers)				
Gulf Coast	$1.45	$1.50	...	...
New York Harbor	1.95	1.95	...	...
Los Angeles Basin, 27 gravity	1.20	1.25	+.05	+.05
LUBRICATING OIL				
(Cents a gal.)				
Oklahoma Refineries:				
Bright Stock, 150-160 viscosity at 210°, 10-25 pour test	14	15½	...	...
Neutral oil, pale No. 3 color, 150 viscosity at 100°, 0-10 pour test	8	10¼	...	...
Western Pennsylvania:				
Bright Stock, 145-155 viscosity at 210°, 25 pour test	17	17	+1	...
Neutral Oil No. 3 color, 150 viscosity at 70°, 25 pour test	23	23	+1	...

[Continued from page 47]

Gulf Coast to points north of Hatteras have continued firm but unchanged, with boats scarce. Rates last reported for clean boats were: 50 cents a barrel for gasoline, 53 cents for kerosene, and 57 cents for No. 2 heating oil. Dirty boats were last chartered at 50 cents for 30-gravity or lighter crude, and 57 cents for 10-20-gravity heavy fuel oil.

Crude Production Lower; Texas Shut Down 3 Days

United States crude oil production decreased sharply in the week ended May 3, having averaged 3,604,300 barrels daily. The output was 120,275 barrels smaller than in the previous week, and 105,000 under the indicated averaged daily market demand for domestic crude in April, as calculated by the United States Bureau of Mines.

The decrease for the week resulted primarily from a decline of 107,200 barrels in Texas, where the oil fields were shut down three days, as compared with only two days the previous week. The state's output dropped from 1,395,900 to 1,288,700 barrels daily, and for the week was under market demand.

California also showed a decrease, having averaged 594,500 barrels daily, compared with 605,900 the week before. Oklahoma was down a little over 1000 barrels. Illinois declined 2150 barrels to 324,850 daily. Kansas production decreased about 4000 barrels to 209,100 daily. Louisiana showed an increase of 1800 barrels in averaging 307,500 daily.

PRODUCTION DROPS AS TEXAS FIELDS ARE SHUT IN LONGER

Estimates Compiled by The OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand (April)	State Allowable (Barrels Daily in April)	BARRELS DAILY FOR WEEK ENDED April 26	May 3
TEXAS—				
Texas Panhandle	.....	.....	80,750	80,800
North Texas	.....	.....	100,000	99,700
West Central Texas	.....	.....	30,350	30,500
West Texas	.....	.....	248,700	211,800
East Central Texas	.....	.....	76,950	76,200
East Texas Field	.....	.....	374,550	376,400
South Texas	.....	.....	210,150	177,600
Texas Gulf Coast	.....	.....	274,450	235,700
Total Texas	1,355,300	1,325,291*	1,395,900	1,288,700
CALIFORNIA—				
Long Beach	.....	.....	42,100	41,100
Midway-Sunset	.....	.....	40,800	43,400
Kettleman Hills	.....	.....	37,900	38,100
Wilmington	.....	.....	82,200	82,200
Others	.....	.....	402,900	389,700
Total California	596,300	571,500†	605,900	594,500
OKLAHOMA—				
Oklahoma City	.....	.....	88,900	80,950
Seminole Area	.....	.....	111,050	108,500
Others	.....	.....	215,125	224,450
Total Oklahoma	429,300	400,000	415,075	413,900
ILLINOIS—				
Salem	.....	.....	97,200	97,100
Louden	.....	.....	67,800	69,300
Centralia	.....	.....	10,900	10,750
Other New Pools	.....	.....	139,900	136,200
Old Pools	.....	.....	11,200	13,500
Total Illinois	336,000	.....	327,000	324,850

DISTRICT OR STATE	Bureau of Mines Estimate of Daily Demand (April)	State Allowable (Barrels Daily in April)	BARRELS DAILY FOR WEEK ENDED April 26	May 3
LOUISIANA—				
North Louisiana	.....	.....	70,200	70,700
South Louisiana	.....	.....	235,500	236,800
Total Louisiana	299,700	300,893	305,700	307,500
KANSAS	200,700	210,700	213,400	209,100
NEW MEXICO	109,000	110,000	109,100	109,100
EASTERN STATES—				
Pennsylvania Grade	49,000	.....	73,800	72,100
Others, Eastern	51,700	.....	19,500	19,500
Total Eastern States	100,700	.....	93,300	91,600
MOUNTAIN STATES—				
Wyoming	88,700	.....	79,400	79,800
Montana	21,300	.....	19,800	19,300
Colorado	4,300	.....	3,900	3,800
Total Mountain States	114,300	.....	103,100	102,900
MICHIGAN	44,000	38,000‡	37,200	37,000
INDIANA	23,700	.....	20,100	21,500
ARKANSAS	75,700	72,024	71,800	71,800
MISSISSIPPI	20,300	.....	22,800	27,500
NEBRASKA	4,300	.....	4,200	4,350
§Total 8 Prorated States	3,110,000	3,028,408	3,154,075	3,031,600
Total United States	3,709,300	.....	3,724,575	3,604,300

* Texas Railroad Commission's estimate of actual net daily production allowing for usual under-production of 3½ percent under net allowable, which at the beginning of April is calculated at 1,373,359 barrels daily. However, allowable normally increases as new wells are completed. Under April order, most Texas fields were ordered shut down April 5, 6, 9, 12, 13, 19, 20, 26, 27 and 30. Texas Panhandle was ordered shut down April 6, 13, 26 and 30.

† Recommendation of Conservation Committee of California Oil Producers.

‡ Estimate of actual production under prescribed regulations, which do not fix a definite state total allowable.

§ Texas, California, Oklahoma, Louisiana, Kansas, New Mexico, Arkansas, Michigan.

WORLD-WIDE DEVELOPMENTS

Fifty Tankers Asked for Aid-to-Britain Program

First action under President Roosevelt's requests for ships for carrying to Britain the munitions and equipment now being manufactured in this country under the lend-lease act, the Maritime Commission announced on May 1 that 50 American tankers will be placed at the service of the British immediately.

All operators of American tankers of more than 5000 gross tons are to meet with commission officials this week for a discussion of the situation.

It was made clear that the commission does not plan to change the registry of any of the tankers used to the British flag. Instead, they will be placed on routes outside the war zone, probably to carry oil from South America to North Atlantic ports where it would be transferred to British tankers for the remainder of the trip.

All told, it is planned to provide 2,000,000 tons of cargo space at the disposal of the British to make up for the losses they have suffered from the Nazi air-surface-submarine campaign against British shipping. While the tankers will be used for the transportation of crude oil, it is probable that quantities of refined products, such as aviation gasoline, will be carried to England on the freighters that are to be transferred to British or other registry.

Australia Working Toward Oil Self-Sufficiency

Press dispatches from Melbourne declare that Australia is carrying out plans to become self-sufficient with respect to oil supplies. Research work carried out in the United States has indicated feasibility of processing oil shales from the Newnes field, New South Wales. Indications are that cracking will yield 10,000,000 gallons per year of high-grade gasoline from 170,000 tons of shale, or 1.7 barrels per ton.

Report Greatly Curtailed Oil Exports to Japan

Exports of crude oil and refined products to Japan have been greatly cut since the imposition of export control July 31, last, it was disclosed last week by Brigadier General Russel L. Maxwell, administrator of export control.

Testifying before a House Appropriations subcommittee, General Maxwell reported that in July and August, 1940, approximately 67,000,000 gallons of crude oil of the restricted types were shipped to Japan, since which time there has been none licensed. Japan has received no licenses for high-test aviation gasoline this year, but between July and March, inclusive, secured approximately 77,000,000 gallons of other gas; only 120 gallons of blending agents were shipped in that period, together with 530,000 gallons of tetraethyl lead, 313,532 gallons of aviation lubricating oil, and 4,714,590 gallons of other lubricating oils.

Committee members asking about Japan's desires were told that she wants more high-grade aviation gasoline, "of which we are not allowing any." Because of the inability to secure supplies, they are producing gasoline of an inferior quality from the less rich supplies that are available to them here, the administrator said.

Three Wildcats Active On Barco Concession

Socuavo 1, Colombian Petroleum Company wildcat on the Barco concession, was coring hard gray sandstone below 8360 feet a few weeks ago. Tres Bocas 2, another Barco wildcat, was spudded, and a third, South Sardinata 1, was rigging.

Tropical Oil Company was drilling Cimitarra 1, wildcat on the Gutierrez concession in Colombia. On the company's De Mares concession in March, four rigs were operating and four new wells were brought in. The Infantas and La Cira fields on this concession produced 345,272 and 1,239,695 barrels of oil, respectively.

Rumor Plans Underway for Line for Santa Barbara Field

Reports are current that Venezuelan Petroleum Company has planned construction of a 12-inch pipe line to run from the recently discovered Santa Barbara field, Meyer C concession, in eastern Venezuela to the company's terminal on the Caribbean in the Puerta la Cruz vicinity. The reported route of the line is from the Santa Barbara well westward to San Mateo, and thence parallel to Mene Grande Oil Company's pipe line to the Caribbean seaboard, a distance of slightly over 100 miles. Confirmation of the report has not been obtained.

Moves in Rig for Wildcat In Eastern Venezuela

Socony-Vacuum Oil Company was moving rig from Panchita 1, wildcat, 70 kilometers southwest of the Oficina field in eastern Venezuela, to location for Hamaca 1, wildcat in the same vicinity. Panchita 1 was abandoned last month at 3606 feet. The company's Anaco 1, four miles northeast of Roble field, was in shale below 9470 feet.

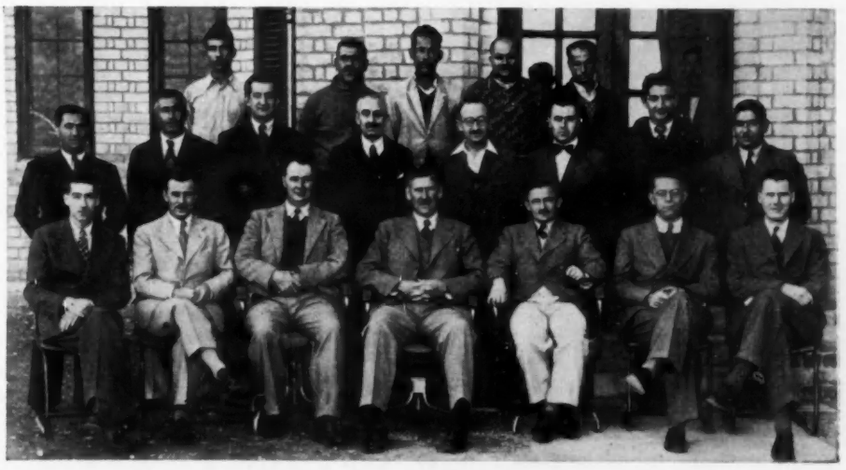
The Texas Company of Venezuela was erecting derrick for a second Rincon Largo test near its No. 1, a new wildcat producer on the Santa Ana structure, eastern Venezuela. No. 1 was still being tested below 9631 feet.

Ultramar S.A.P.A. was drilling below 3864 feet in Saladillo 2, wildcat in Jujuy province, Argentina. The company's Piedra Clavada 1, wildcat, in Santa Cruz province, was coring at 2998 feet following shows of gas.

First Estimates of Barco Concession Are Shaded

Recognition that the initial estimates of wealth in the Barco concession in Colombia were too optimistic is indicated in Socony-Vacuum Oil Company's annual report for 1940. Referring to the concession, the report says:

"There has been deducted from earned surplus and placed on the balance sheet for reserve for contingencies the amount of $75,000,000 for the purpose of providing for possible losses which may or may not be realized in the foreign position. Of this reserve, $16,000,000 is definitely assigned to the investment in and advances to Colombian Petroleum Company and South American Gulf Oil Company operating in Colombia, South America. A revised



Members of the geological department of Iraq Petroleum Company are pictured before the Central Geological Laboratory, Kirkuk, Iraq. Seated in the first row, left to right, are W. K. MacFarquhar, micropalaeontologist; E. J. Daniel, resident geologist; F. E. Wellings, senior geologist; N. E. Baker, chief geologist; F. R. S. Henson, senior subsurface geologist; A. N. Dusenbury, micropalaeontologist, and A. H. Smout, assistant geologist. In the second row are J. K. Iskender, index clerk; T. Kelaita, laboratory assistant; A. B. Akillian, draughtsman; V. N. Iolkin, chief lithographer; R. Aladjadji, chief laboratory assistant; K. B. Portoian, chief draughtsman; B. B. Akillian, lithographer; G. H. Hammama, sample clerk. Third row: Mohamed Omar, Qurban Ali, Aziz Gharib, Wais Mohamed, Yonan Odishoo.

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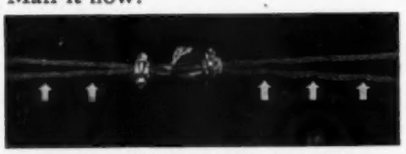

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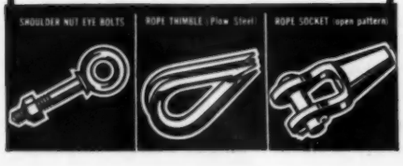

estimate of proven recoverable crude reserves in the Barco concession indicates the possibility of this loss, if no other commercially producing structures are developed there. Drilling during the next two years will probably be required to test such structures. The total investment in and advances to these companies amounted to $26,201,414.62. After $3,700,000 losses written off against 1940 earnings and the contingent reserve stated above, the amount of investments in and advances to these companies remaining on our books is $6,501,414.62."

Late in 1939, South American Gulf Oil Company completed an $18,000,000 pipe line from the Barco fields to Covenas. Last year production of the concession averaged 14,000 to 15,000 barrels daily, largely from the Petrolea field. This output was a little over half the capacity of the 12-inch pipe line.

Mene Grande Oil Company Venezuelan Investments Up

Mene Grande Oil Company has been adding appreciably to investments and improving its facilities in eastern Venezuela during the last six months. The company has practically finished paving 17 kilometers of a new highway out of Puerta la Cruz, and is paving test sections elsewhere on the highway between Puerta la Cruz and the Oficina field. Experience indicated that heavy loads to be carried over the road may require different treatment at various points.

Early last March, the company completed a $40,000 hospital at Puerta la Cruz. Last month, the company finished a new office building at its San Tome camp at a cost of about $150,000. The building has a two-story central portion, four one-story wings, and is constructed of stucco and steel. The company expects to finish early in June a $250,000 hospital at the San Tome camp.

Election of Angarita as President Regarded Favorably

Official Washington is reported to favorably regard election of General Isaias Medina Angarita as president of Venezuela. His predecessor, Lopez Contreras, who was not a candidate, appointed Angarita to the ministry of war and the navy in 1936, and as minister he visited the United States in the spring of 1940.

Contreras, in office since 1935, has been generally regarded as maintaining an attitude of fairness and favor toward private oil companies in Venezuela. In the course of the presidential campaign, Angarita spoke highly of the record of Contreras and pledged himself to continue his general policies. Specifically, Angarita took a stand for civil liberties granted under Contreras, protection of private property and labor, and encouragement of all phases of Venezuelan economic enterprise.

Angarita will be inaugurated May 5.

Pave Way for Exploration In Southern British Colombia

Drilling for oil in British Columbia south of the Fraser River will be recommended, it is expected, as a result of an order-in-council announced by Premier Pattullo.

The Premier said the reserve that was placed on drilling for oil in the New Westminster district between the south bank of the Fraser River and the international border has been cancelled.

"A number of applications have been made for authority to prospect for oil, and by lifting the reserve, the opportunity will be afforded to do so," the Premier stated.

Some 20 years ago several companies did drilling in the area, particularly at Boundary Bay and near Aldergrove. Gas was encountered in one or more of the attempts, but the drillers were unsuccessful in finding oil.

Geological reports of the district were said to pronounce the area as a potential source of oil.

United States Report Gives Details of Equipment Exports

Exports of well drilling equipment from the United States last year amounted to $17,492,000. Exports of "other petroleum well and refining machinery," an undifferentiated classification by the department of commerce, totaled $7,328,000.

Venezuela was the leading importer, taking $3,315,000 worth of drilling equipment. Close behind was Russia, taking $2,605,000. Argentina took $2,499,000. A list of the principal countries importing well drilling equipment follows:

Venezuela	$3,315,000
Russia	2,605,000
Argentina	2,499,000
Canada	1,551,000
Trinidad, Tobago	1,191,000
Colombia	900,200
Brazil	343,200
Mexico	308,000
Peru	273,600
Cuba	207,500
Ecuador	198,000
N. West Indies	81,300
Dominican Republic	17,000

Sharp Decline Reported in First Quarter Exports

Exports of crude petroleum during the first quarter of the current year dropped to 5,018,000 barrels, valued at $6,326,000, from 11,637,000 barrels valued at $15,702,000 in the corresponding period in 1940, it was disclosed last week by the Department of Commerce.

Exports of refined products also were at levels far below those of a year ago, it was stated, shipments of gas and fuel oil aggregating 5,335,000 barrels valued at $6,740,000, against 7,244,000 barrels valued at $8,973,000; motor fuel and gasoline, 3,934,000 barrels valued at $13,842,000 against 5,211,000 barrels valued at $16,896,000, and lubricating oil, 1,880,000 barrels valued at $16,930,000 against 3,307,000 barrels valued at $32,133,000.

Imports of crude petroleum, it was shown, were approximately 50 percent higher than in 1940, first quarter receipts being 10,396,000 barrels valued at $8,113,000 against 7,058,000 barrels valued at $5,279,000. Imports of gas oil and fuel oil, however, showed a slight decline, from $7,956,000 in 1940 to $7,725,000 this year.

Illinois-Indiana

New Edwards County Pool; Two Wildcats Set Casing

A new field was opened in Edwards County, casing had been set at two other wildcat tests and two outpost ventures were showing for pool extensions in the Illinois basin.

R. B. Martin's R. P. Lester 1, a mile south of Ellery, W½ SW SW 19-2s-10e, Edwards County, swabbed an estimated 10 barrels an hour after casing was perforated opposite McClosky pay at 3341-51 feet. The well was being cleaned out and probably will be acidized before completion. It is five miles west of the nearest production in the Albion pool, also in Edwards County.

In Zif township of Wayne County, Art Muhlbach's Muhlbach and Gordon 1, W½ SE SW 36-2n-8e, was waiting on cement after recovering McClosky saturation in a core at 3080-90 feet. The test is a mile east of principal production in the township.

Wiser Oil Company's Overholt 1, wildcat two miles east of Elkville in Jackson County, C SE SW 22-7s-1w, was waiting on cement and will test prospective pay in the Benoist and Aux Vases sands. Casing was set to the Aux Vases at 2096 feet, with a drillable section opposite the Benoist at 1999-2003 feet. The test was drilled through a dry McClosky and then plugged back to test the more shallow shows. Operators have indicated it will be some time before plug is drilled.

An outpost a mile southeast of the Mt. Carmel field, Wabash County, Olds et al's Riverside Park (Fairgrounds) 1, SW SE NE 21-1s-12w, was waiting on cement after recovering saturation in the Cypress. Total depth is 2110 feet. The Cypress is one of three formations productive in the Mt. Carmel field.

An outpost 1½ miles south of the Dix field, L. and W. Drilling Company's Sargent 1, farmout from The Carter Oil Company, NE SW NW 22-1s-2e, was waiting on a 10-quart shot in Benoist sand at 1931-37 feet. Six feet of saturation was cored.

In Fayette County, Kingwood Oil Company's Torbeck 1, SW SW SW 30-5n-3e, was drilling below at 2002 feet for the McClosky after finding streaked saturation in Benoist sand in a core at 1907-12 feet. Top of the Benoist section was 1906 feet.

Tonti Extended in Benoist

Benoist production boundaries of the Tonti field, Marion County, were given a slight east extension following the recovery of good saturation at Absher-Booth's McMackin 8, SW SW 34-3n-2e, where Benoist was topped at 1938 feet, and hole bottomed at 1948 feet. An electric log was being run, after which casing was to be cemented. A new Marion County wildcat was started, Hudson-Hess' Ben Young 1, SW SW SW 7-2n-2e, a mile east of Odin and two miles west of the nearest production in the Lake Centralia-Salem field. Surface pipe was set. In the Alma area of Kinmundy County, Swan-King's Martin Cemetery 1, SW SE SW 36-4n-2e, was abandoned at 2252 feet through the McClosky lime. A show of oil was reported in the top of the Benoist at 1996 feet.

E. J. Ruwald's Ruldph 1, S½ SW SW 17-3s-1w, east outpost to the Dubois field, Washington County, was preparing to drill plug to Benoist pay cored at 1374-82 feet. It is one location from production.

A new pay zone for the Inman field, Gallatin County, was in prospect after 30 feet of Waltersburg-sand saturation was cored at T. A. Ferral's Goedal 1, NW SE 19-8s-10e. In addition, the test found 17 feet of saturation in the Palestine, which with the Tar Springs and McClosky already are productive in the pool. Goedal 1 is two locations south and east of the discovery well. Phillips Petroleum Company's Egyptian Tie & Timber Company 3, Section 16-8s-10e, in the same field, cored saturation from 232 feet in a Pennsylvanian-age sand above the coal. Most of the tests drilled in both the Inman and Omaha fields of the county are finding oil stains in the Pennsylvanian, but this show is probably the most shallow yet reported. However, no saturation yet found in the Pennsylvanian has appeared commercially productive.

A Randolph County wildcat eight miles south of the old Sparta gas field, Ruwaldt et al's Schulee 1, E½ NE NE 35-5s-5w, was waiting on cement after setting pipe to test Cypress at 983-89 feet. The test is three miles from the Perry County line.

West Liberty Outpost Dry

In Jasper County, a Pure Oil Company outpost, Nora Grove 1, NW NE 16-5n-10e, east of production in the West Liberty field, was abandoned at 2590 feet.

A new Richland County wildcat was being started, H. M. Horton's Page Whitaker 1, NE NW NE 8-2n-14w, two miles southwest of a dry hole drilled some time ago by Kingwood Oil Company.

Continental Oil Company's W. F. Ackerman 1, NE NW NE 25-5s-10w, a White County wildcat two miles north of Maunie, was being completed following a 7-quart shot of nitro in Bethel sand at 2822-2844 feet. Before the shot, the test swabbed about 30 barrels a day. Sinclair-Wyoming set a squeeze job at Georgia N. Boetticher 1, NE NE SW 1-7s-11e, first test of the Aux Vases sand in the New Haven field, White County. Tide Water Associated Oil Company's B. S. Bacon 1, NE SE NE 5-5s-14w, southwest of production in the county's New Harmony field, was waiting on cement. Pipe was set to the Aux Vases, where pay was cored at 2837-59 feet, with alloy sections opposite the Cypress at 2589-2622 feet and the Benoist at 2726-45 feet.

Twelve miles west of Centralia, Clinton County, Roy Benoist's Custis 1, wildcat in NE SW NE 18-1n-2w, was abandoned at 1391 feet through the Benoist. Cypress was topped at 1188 feet, and the Paint Creek at 1235 feet. A mile southwest of Custis 1, Edward Mack et al's Maschhoff 1, SW 18-1n-2w, was drilling at 300 feet with rotary tools. T. M. Conrey, Jr., is the contractor.

Large Griffin Completion; Bufkin Draws Three Starts

Continental Oil Company's Kleiderer A-5, SE NW NE 33-3s-14w, Posey County, just south of the Gibson County line, flowed 1390 barrels in initial 17 hours from McClosky lime for what is considered the heaviest McClosky producer completed in the Griffin field.

North of this lease 1300 feet, W. C. McBride, Inc.'s Jessie Blood 1, SE SE NE 28-3s-14w, west outpost to Griffin field production in Gibson County, was completed in the McClosky pumping 39 barrels a day at 2912-16 feet, with hole bottomed at 2950 feet. Same operator was drilling at 2240 feet for Blood 2, NE SE NE 28-3s-14w.

There were three new starts in the Bufkin area of Black Township, Posey County, where Gulf Refining Company's William Fred Schreiber 1, SE NE SE 23-6s-13w, at last reports swabbed 39 barrels of oil and one barrel of water in 24 hours from Cypress at 2469-95 feet. South of Schreiber 1, Dirickson et al's Utley 1, NW SW NE 26-6s-13w, had derrick up; northwest of Schreiber 1, Dickerson et al's Slygh 1, SE NW NW 23-6s-13w, was drilling at 1280 feet, and northeast of Schreiber 1, Gulf Refining Company was starting below surface casing in W. P. Juncker 1, SW SW SW 13-6s-13w. West ½ mile of Schreiber 1, C. A. Lynch's Sailor Heirs 1, SW NE SW 23-6s-13w, Gulf Refining Company farmout, was temporarily abandoned after derrick was erected and some materials moved in. One location north of Schreiber 1, Gulf Refining Company's Levin Blackburn 1, NE NE SE 23-6s-13w, failed to get a commercial show in upper horizons, and was deepening in Ste. Genevieve, topped at 2655 feet. Renault lime was topped at 2630 feet, and Aux Vases sand, also dry, was topped at 2640 feet.

Drilling plug was a prospective new pool-opener in northern Point Township, Posey County, scene of five dry holes within the last two years, Johnson Oil & Refining Company's John W. Spencer 1, SE SE SE 26-7s-15w. Casing was set at 2724 feet to test five feet of saturation topped at 2732 feet. Pay is in the Aux Vases section, but is described as more of an oolitic lime than the sand usually found.

In Vanderburgh County, east of Heusler Dome field production, Truman Drake's Robert Nurrenbern Heirs, NW NW NW 5-7s-11w, was cleaning out after shot in Mansfield sand pay at 1117-59 feet, the thickest shallow sand body yet found in that area. Test is just east of Drake's Nurrenbern 1, Mansfield sand discovery now making 25 barrels a day.

Oklahoma-Kansas

Seminole Wildcat Flows 162 Barrels From 3450 Feet

C. C. Cummings, P. J. McIntyre et al opened a new pool for Seminole County. Brown 1, SW SE NE 14-9n-7e, between Bethel and East Seminole pools, flowed 162 barrels of oil and 240 barrels of water in 24 hours through ¾-inch tubing choke with packer set at 3220 feet. Crude is 39-gravity. Gas gauged 1,140,000 feet per day. Sample tops on this discovery place Calvin zone at 1790-2120 feet, Senora sand 2400-20 feet, Earlsboro zone 2710-2820 feet. Booch 3265-90 feet, Wapanucka 3447 feet, Cromwell zone 3451-3570 feet, Mayes 3910 feet, Woodford 4010 feet, Misener 4047-50 feet, Hunton 4050 feet, Sylvan 4165 feet, Viola 4256 feet, and Wilcox sand at 4333 feet. Hole was bottomed at 4337 feet, and plugged back to 3843 feet. Pay was perforated with eight holes at 450-51 feet in the Wapanucka-Cromwell zone.

Shell Oil Company opened initial Wilcox sand production ½ mile north of East Cromwell pool, Okfuskee County, at Smith 1, SW SE SW 26-11n-8e. Sand was topped at 4224 feet, and penetrated to 4242 feet. Swab recovered 82 barrels of oil and 10 barrels of water on a 13-hour test. Hole was plugged back to 4237 feet for a water shut-off, and sand shot with 18 quarts at 4231-34 feet. Operators were cleaning out hole for further testing.

The Texas Company may have a small Cromwell-sand strike in Okfuskee County at Butcher 1, C N½ SE NW 15-12n-9e, 1¼ quarter miles south of Mason pool and three miles north of a single Hunton lime gas well. Cromwell sand, topped at 3300 feet, was shot with 40 quarts at 3305-25 feet. Swabbing test recovered 46 barrels of oil in 24 hours. Cavings in the hole hindered testing, and operators were cleaning out. This wildcat logged Oswego at 1618 feet, Prue 1665 feet Inola 2550 feet, Salt sand 2580 feet, Brown lime 2790 feet, Booch 2940 feet, Gilcrease zone 3150-80 feet, Cromwell 3300 feet, Mayes 3690 feet, Woodford 3795 feet, Hunton 3820 feet, Sylvan 3861 feet, Viola 3955 feet, Dense 3980 feet, Dolomite 3982 feet, Sandy Dolomite 3990 feet, First Wilcox 3998 feet, and Second Wilcox 4030 feet. Hole was bottomed in sand at 4048 feet, and plugged back to 3325 feet.

Gardner Petroleum Company et al's Lowry 2, C N½ SE SW 12-19n-1w, revival discovery for East Orlando pool, Payne County, shot Misener sand at 4737-47 feet with 10 quarts. Pinched in, the test flowed 154 barrels in 24 hours.

Wilcox Oil & Gas Company's Curry 1, NEc NW 8-15n-5e, four miles west of Skelllyville pool and near Kendrick pool, Lincoln County, drilled to 4100 feet in Mayes lime after checking too structurally low to deepen to Wilcox sand. Hole was plugged back to 3495 feet, and 7-inch casing set at 3463 feet to test a show of oil as indicated on electric log. Prue sand was topped at 3488 feet, and core at 2772-82 feet showed one foot of shaly sand with slight odor and 9 feet of sandy shale. Second core at 3491-3501 feet showed 10 feet of shale, with thin streaks of sand with good odor in top one foot. This wildcat topped Hogshooter at 2410 feet, Checkerboard 2740 feet, Cleveland 2770 feet, Oswego 3412-79 feet, Prue 3488 feet, Verdigras 3540 feet and Brown lime at 3958 feet.

Bryan Petroleum Company completed a Wilcox sand discovery in West Arno pool, Creek County. Deere 1, NE SE NE 34-14n-7e, pumped 64 barrels of oil in 24 hours. First Wilcox sand was topped at 3967 feet, Second Wilcox sand at 3996 feet, and hole carried to 4020 feet. Cement plug was set at 3975 feet, and pay shot with 100 quarts.

Eagle Oil Company's Mann 1, SW NE NE 31-7n-7e, southeast of Little River pool, Seminole County, blew drilling mud and water over the mast, leaving a good show of oil in the pits, as operators attempted to run casing and test. Pay is upper Senora sand at 2010-45 feet, with bottom of hole at 2208 feet.

Amerada Petroleum Corporation completed a North St. Louis pool discovery at Peters 1, SW NW SE 27-8n-4e, flowing 524 barrels of crude in 24 hours through ½-inch tubing choke. Hunton lime at 3863-79 feet was perforated and treated with 1000 gallons of acid. Hole was originally carried to 4346 feet in Simpson, and plugged back to 3935 feet.

Pratt County Wildcat Makes Gas Well From Viola Lime

George Reeves et al had a Viola lime gas discovery at Stark 1, C W½ SW NW 18-26-11w, seven miles northeast of Iuka pool and the same distance northwest of Cunningham oil and gas pool, Pratt County. Viola lime, topped at 4123 feet, was cored at 4135-40 feet for a good show of oil. Operators deepened to log Arbuckle lime at 4289-4339 feet for no show. Plug was set at 4154 feet, and 4½-inch casing set at 4121 feet. Plugs were drilled and hole cleaned out to 4155 feet. After treatment with 100 gallons of acid, hole filled 320 feet with oil. Second treatment with 1000 gallons brought in an 11,000,000-foot gasser.

Stanolind Oil & Gas Company's Hill "B" 1, C N½ NE NW 11-23-12w, one mile southwest of Richardson pool, Stafford County, may open a new producing area. Arbuckle was topped at 3664 feet, and core at 3664-67 feet recovered full saturation in dolomitic lime. Five and one half-inch casing was set on top of pay. The wildcat topped Anhydrite at 582 feet, and Lansing at 3290 feet.

I. W. Murffin extended Dubuque pool, Russell County, ½ mile north at Janne 1, C W½ SW SE 27-15-12w, making 120 barrels of oil in 24 hours following acid treatment of Kansas City-Lansing lime. North 1½ miles of Rick pool and ½ mile southeast of abandoned Straub pool, Barton County, it revived that area after receiving a swabbing potential of 51 barrels per day. Production is from Kansas City-Lansing lime at 3226 feet.

H. H. Blair et al's Pierano 1, C N½ NE NE 4-16-11w, ½ mile northeast of Davidson pool, Barton County, pumped 19 barrels the first hour. Following acid treatment in Kansas City-Lansing lime, a temporary potential of 48 barrels daily was established.

Cetal Oil Company's Lyon 1, C S½ SW SW 1-8-24w, west offset to the Penokee pool discovery, Graham County, perforated and acidized lime at 3758-62 feet for a show of oil and water. Kansas City lime was topped at 3608 feet, Marmaton lime at 3760 feet, and hole bottomed at 4004 feet.

Zephyr Drilling Company's Shotten 1, C W½ NW SE 28-22-13w, four miles north of St. John pool, Stafford County, logged Viola lime at 3740 feet, Simpson at 3795 feet, Arbuckle lime at 3853 feet, and was drilling below 3885 feet with nothing showing.

In Trego County, W. M. McKnab et al were attempting to shut off water with plug back jobs at Krysi 1, C N½ NW NE 1-12-22w, three miles southeast of Wakeeney pool. This wildcat logged Anhydrite at 1792 feet, Ft. Riley 2550 feet, Neva 2890 feet, Topeka 3406 feet, Lansing 3644 feet, Sooy 4013 feet, and Arbuckle lime at 4043 feet. Core recovery showed three feet of dolomitic lime with fair porosity and stains of heavy black oil at 4049-52 feet. Five-inch casing was set on top of Arbuckle lime.

Nebraska-Iowa

West Shubert Pool Offiset Makes Hunton-Lime Well

W. H. Martgan et al completed a south 40-acre location offset to the West Shubert pool, Richardson County, for 176 barrels of oil per day. Ellen Smith 1, C E½ NW NW 31-3n-16e, treated Hunton lime at 2513-21 feet with 1000 gallons of acid and 500 gallons of butane. The offset pumped 276 barrels of fluid, 37 percent water in 24 hours. Five and one half-inch casing was set at 2515 feet, and hole plugged back from 2539 to 2521 feet.

Uhri Oil Corporation was attempting to revive the abandoned Dawson pool, 10 miles west of Falls City pool, at Ogle 1-A, NW SE SE 9-1n-14e, Richardson County. Operators plugged back from 2260 to 2252 feet, and cemented 5-inch casing at 2252 feet. Cement plug was drilled to 2257 feet, and packer set at 2255 feet for testing. Hunton lime was topped at 2258 feet.

Indian Territory Illuminating Oil Company's Bankers Life 1, C NE SE 3-2n-15e, between Falls City and Shubert pools, was deepening below 3100 feet to test Arbuckle lime. Old total depth was 2476 feet in Hunton lime, topped at 2418 feet. Johnson and Mitchell et al's Eickhoff 1-A, C NW NW 4-2n-16e, offset to an uncommercial Hunton lime test, was below 10-inch surface pipe.

Henry Blazer encountered a show of oil and gas at 845 feet in Wilson 1, NE NW NW 4-1n-10e. Eight-inch pipe was set at that depth to test. Walter Rider et al's Warren 1, C NE NE 21-3n-5e, nine miles south of Beatrice, Gage County, Nebraska, topped Kansas City lime at 1435 feet, and was deepening below 1750 feet. In the same county, S. F. Miller et al's Bethoud 1, C E½ NW SW 2-4n-6e, was drilling below 750 feet with nothing showing.

Continental Petroleum Company of Nebraska et al's Gauchat 1, SW NW NE 26-6n-13e, was cleaning out at 1915 feet. Mississippi lime yielded water at 1625-1790 feet. Bow & Arrow Oil Company's Wrightsman 1, C W½ SW NW 36-6n-14e, based Kansas City lime at

1027 feet, and was shut down at 1455 feet after setting 8-inch casing at 1450 feet.

August Krueger et al's Roe 1, NE SE SW SW 5-7n-7e, will test Hunton lime at 1525-28 feet. Lansing was topped at 780 feet, and Misener at 1510 feet. Operators were waiting on cement.

Iowa wildcatting gave poor results. The Ohio Oil Company may abandon Wisnom 1, C NW NE 23-68n-41w, southwest of Farragut, Fremont County, around 2975 feet. Lansing was topped at 500 feet, base Kansas City 745 feet, Mississippi 1385-1650 feet, Hunton 1856 feet, Silurian 2180 feet, Sylvan 2270 feet, Viola 2395-2403 feet, Decorha lime 2795 feet, St. Peter (Wilcox sand) 2921 feet, and Arbuckle lime 2951 feet. No shows were recorded.

Pryor & Lockhart and Stanolind Oil & Gas Company's Marr Estate 1, C E½ NE SW 32-68n-33w, four miles southeast of Bedford, Taylor County, topped Mississippi at 1351 feet, Hunton lime at 1705 feet for a hole full of water, and was shut down for orders at 2165 feet.

F. E. Hunt et al's McConnell 1, C SE SE 11-78n-30w, plugged back to 1448 feet from a previous depth of 1555 feet, and was drilling out cement. Smythe, McLaughlin & Comfort et al's Hook 1, C NE NW 18-69n-35w, topped Bartlesville sand at 1342 feet, Mississippi lime at 1495 feet, suspended operations at 1537 feet, and cemented 8-inch string at 1537 feet.

J. B. Barnes et al's Lucas 1, SW NE SE 28-70n-43w, cored at 1100-16 feet to recover dry shale and lime. In deepening, Hunton lime was logged at 1306 feet, and operations quit at 1882 feet with no shows encountered.

Locate Large Anticline in Southcentral South Dakota

Location of a large anticlinal area of possible interest to oil prospectors, lying between the Big Bend of the Missouri river and the Bijou hills in southcentral South Dakota, was reported by the South Dakota Geological Survey last week.

The discovery was made by a field party while investigating manganese deposits in the vicinity of Chamberlain, State Geologist E. P. Rothrock said. The structure includes parts of several townships and covers considerable territory that may be worth prospecting, he said.

"Further interest is added to the region by the fact that some small showings of gas have been encountered in water wells in the district. Prospecting should not be expensive, as the total depth of the sediments worth prospecting is estimated not to exceed 2500 feet."

Heading the field party that made the discovery were Dr. M. E. Wing, of Beloit College, Beloit, Wisconsin, and Dr. J. P. Gries, South Dakota State School of Mines, Rapid City.

The department's announcement is expected to further intensify interest in South Dakota oil prospecting. An estimated 8,000,000 acres are already under lease in North and South Dakota, and much field work is planned for this summer by both large and small companies. The new anticlinal area, however, is outside the region of present leasing activity, which is concentrated in the north central part of the state.

The growing interest in South Dakota oil prospecting was recognized by the state School and Public Lands Department in announcement that it is now prepared to grant 10-year oil and gas leases. The leases will provide for an annual rental charge of 10 cents an acre for the first five years, and 25 cents for the remainder. They will be signed only after being advertised for public auction, with all sales to be held in Pierre. The department now has 81,630 acres under oil and gas lease, producing a cash rental of more than $8000. All leases provide for payment of one-eighth royalty.

Rocky Mountain Area

Deep Tests Announced as Spring Comes to the Rockies

With spring weather in the Rocky Mountain district, several important deep tests in widely scattered areas have been announced.

In the unproved middle fault block of the Frannie field, Park County, northern Wyoming, Stanolind Oil & Gas Company was building derrick for Rosenberg 21-X, C NE SW NW 25-58n-98w, which will drill to the Tensleep at around 3000 feet. The test, if productive, will prove some 100 acres. Location is one mile southeast of production, the company's Rosenberg 24, NE SE NE 26-58n-98w, which recompleted last week for 425 barrels daily after deepening 79 feet into the Tensleep sand with new bottom at 3080 feet. Well had been producing around 200 barrels daily.

West States Oil Company was preparing to drill a deep test on the Canyon Creek structure six miles west of the Hiwatha and five miles southwest of the Vermillion Creek oil and gas fields in Sweetwater County, southwestern Wyoming. Location will be Unit 1, C SE SE 10-12n-101w, and is on the Humphrey-Government lease. The structure is unitized, embracing 14,505 acres within the designated unit area.

Rocky Mountain Drilling Company's State 1, SW SW SW 36-20n-104w, 1¾ miles northwest of the nearest production in the North Baxter Basin field, Sweetwater County, Wyoming, will be deepened for a test of the Tensleep sand, expected at around 6200 feet. The well was shut down at 5850 feet in the Red Beds with fishing job.

Extension of the Powder Wash field, Moffat County, northwestern Colorado, appears likely with Mountain Fuel Supply Company's Musser 3, NW SW 5-11n-97w. The test showed 500 feet of oil and 45 feet of salt water on drill-stem with tester open one hour and seated on sand in the Wasatch at 5273-5283 feet. It was deepening below 5601 feet for lower objectives in the Wasatch. Test is ¾ mile southwest of Musser 1, and one mile south of Stewart 1.

An important deep test to the Devonian formation is being undertaken by The California Company. The company has acquired oil and gas rights to possible deep production on some 10,000 acres covering the Moseby Dome structure in the eastern part of the Cat Creek field, Garfield County, Montana. It took over operating rights to the deep sands from H. H. Schwartz, Jr., and Arro Oil & Refining Company, and will complete Charles 4, C SE NW 21-15n-30e, to 6500 feet. The California Company was resuming operations in this test, shut down for the past several weeks at 3528 feet.

North and West Texas

Unloading Crane Wildcat for Test of Dolomite Saturation

An occasional head of oil was made by Gulf Oil Corporation's University 1-F, Crane County wildcat, as unloading operations progressed to the 5600-foot level on the 10,658-foot Ellenberger prospect. Drilling fluid was being removed by swabbing through 2½-inch tubing. The recovered oil is 46-gravity, and is accompanied by a small volume of sweet gas. Production is from dolomite saturation topped at 10,630 feet, with an elevation of 2574 feet. Completion program calls for a thorough natural test, then possibly the hole will be deepened before using acid, which is effective in boosting the oil and gas yield from Ellenberger. University 1-F is the third deepest test in the district, and if it makes a commercial well it will be the deepest in Texas outside of the Gulf Coast.

M. A. Grisham and M. J. Delaney's Cowden 1, Section 4, North Goldsmith pool, Ector County, was showing a small volume of 38-gravity oil and sweet gas with rotary mud while unloading to test broken saturation in Lower Permian at 6240-6335 and 6410-22 feet, with 5½-inch pipe at 5260 feet. Acid will be relied upon to attain commercial production. Phillips Petroleum Company's University-Andrews 1, Andrews County semi-wildcat and northeast of the Embar pool, was drilling at 7495 feet. Sinclair Prairie Oil Company's Palmer 1, ¾ mile north by east of production in the Foster field and the area's largest natural producer, earned a potential rating of 2808 barrels of 35-gravity oil when given 6-hour proration gauge. Production is from regular pay at 4199-4205 feet. The well flowed 325 barrels in two hours via casing when the pay was tapped with cable tools, and the flow prevented normal penetration.

Forest Development Corporation's Edwards 1-C, mile southeast of the Douro one-well pool, was drilling at 4500 feet with tools in San Andres lime, topped at 4371 feet with an elevation of 3042 feet. No shows of any consequence were recorded in the latter zone, although the well filled 3000 feet with oil from upper lime at 4248-57 feet.

Sixth Simpson for Abell Pool

The Abell pool contributed its sixth Simpson sand producer with completion of Magnolia Petroleum Company's Crockett 1 flowing 1210 barrels of 45-gravity oil initial, based on two consecutive 3-hour open tubing gauges. Production is from sand at 5299-5335 feet. Simpson and Tulip Creek markers were called at 4755 and 5000 feet, respectively, with elevation of 2390 feet. The company has authorized drilling Crockett 3 in the northeast corner of the 458-acre lease. Its Markey 1-B, northwest offset to the discovery, registered sharp dip in structure in logging top of Simpson at 4840 feet, and top of pay at 5378 feet

with elevation of 2394 feet. Operations were halted at 5380 feet to land 7-inch at 5377 feet. Sinclair Prairie Oil Company's Daley 1, north offset to the above completion on Crockett tract, logged top of Simpson at 4760 feet, and was drilling at 4815 feet.

Siemoneit Drilling Company's Walsh-Meyers 1, east portion of the Abell pool, blew out at 3358 feet with oil and water flow rated at 250 barrels daily, accompanied by five to seven million feet of gas. Circulation was restored, and drilling was underway at 3450 feet. Stanolind Oil & Gas Company's Conry-Davis 1, southeast outpost that showed for an oil producer when formation tester was used in the Tubb pay at 3746-3817 feet with elevation of 2376 feet, was drilling at 4320 feet.

Gulf Oil Corporation's Wristen Bros. 6-A, 1406 feet east of the company's Silurian pay discovery in the Shipley pool, Ward County, was flowing 25 barrels oil hourly after retreatment with 10,000 gallons of acid under load of hot crude. Apparently this second stage treatment was not effective, as the well earned a temporary potential of 782 barrels of 33.4-gravity black and heavy oil with gas/oil ratio of 5613 feet per barrel after initial treatment with 5000 gallons of acid in Silurian pay at 7022-80 feet. Top of Silurian was logged at 6927 feet, or 4429 feet subsea, being about level with the discovery.

Montague County Discovery Given 432-Barrel Potential

Rated potential of 432 barrels of 42-gravity oil was earned by Sinclair Prairie Oil Company's Clingingsmith 1 in proving a new pool for Montague County from conglomerate at 6119-28 feet. The initial is based on flow of 324 barrels in 18 hours through open 2½-inch tubing at 6100 feet. This strike is four miles southwest of Nocona and 2½ miles southwest of nearest production in the Rogers & Rogers field which produces from two Strawn sands and the 5200-foot Bend conglomerate Clingingsmith 1 tested water at 5804-37 feet in Bend, topped at 5662 feet, and is believed to be in Marble Falls, which has not previously produced in the east portion of the district. Top of the producing lime section was called at 5918 feet.

Sinclair Prairie Oil Company holds lease on a large block of supporting acreage, although three independents have single close-in small tracts. Additional development has been authorized by the company. A pipe line connection will be available early this week, as Sinclair Refining Company was laying a 9000-foot 4-inch lateral east from the well to tie into a unit of its multiple system that pumps north.

Benson & Benson's Seay 1, western Montague County semi-wildcat and 1¾ miles southeast of Ringgold pool, pumped 43 barrels of 34.9-gravity oil on first 3-hour gauge after being idle for a few days. Production is from conglomerate at 5752-62 feet in Bend, topped at 5664 feet. It is considered an extension for the Ringgold pool, but the oil is black and about 10 degrees lower in gravity. Gulf Oil Corporation's Scaling 1, eastern Clay County semi-wildcat amidst abandoned Strawn producers in the original Worsham pool and 2½ miles southwest of Ringgold pool, was installing machine to condition hole for a production test in Ellenberger dolomite at 5814 feet. Preliminary test failed to offer much encouragement for production either in the Bend or Ellenberger.

Larry Hults and Tom B. Owens' Summer 1, north offset to their Hults-Owens pool discovery, western Montague County, was awaiting drill-stem test at 6063 feet after logging subnormal porosity at 6038-63 feet. Top of Bend was called at 6038 feet, being 33 feet low. Wilcox Oil & Gas Company, successor to H. G. Marshall et al, was completing Bullard 1, west offset to the discovery, as a small pumper after plugging back from water in the Bend at 6100 feet.

Pois, Schulz and Pigg's Green 1, southwest outpost for the Fargo pool, Wilbarger County, proved dry in the Cisco and was drilling at 3675 feet. Amerada Petroleum Corporation's Goodpasture 2, northeast outpost and on the discovery tract, flowed 92 barrels oil on 3-hour official gauge through ½-inch choke from Basal Canyon at 3973-84 feet, with the hole bottomed in shale at 4000 feet. The company had derrick up for Goodpasture 2-B. Humble Oil & Refining Company's Anderson 1-B, east outpost, landed 5½-inch pipe on top of Strawn lime at 4410 feet to try for completion at 4470 feet.

KMA Ellenberger Extended

The Ellenberger lime producing sector of the KMA field was enlarged northeast by a prolific completion, but its low structural position curtails the outlook for further extensions in this direction. Tom Cochran and Wofford Cain's Bradley 1, on 20-acre triangle lease on east edge of H&TC Section 27, Block 7, flowed 51 barrels of pipeline oil on ½-hour gauge through tubing from dolomite saturation at 4484-94 feet in Ellenberger, topped at 4428 feet. It is ⅝-mile northwest of Consolidated Oil Company's Ferguson 25, recent completion that flowed 94 barrels oil on 3-hour potential through ¾-inch choke after using 3000 gallons of acid in broken pay at 4192-4292 feet in Ellenberger, topped at 4188 feet. The latter is the highest of 13 completed deep wells, and the Ellenberger marker dips 115 feet between it and Bradley 1, as compared to a difference of 110 feet on the KMA-lime marker.

H. D. Egger et al's Preston 6-E, near SW NE SE H&TC Section 20, and a short distance north of a line between Ellenberger producers, encountered a sharp north dip in logging top of Ellenberger at 4482 feet, being 178 feet low when correlated with Golding & Cochran's Preston 11-A-E, ⅜-mile southeast. Egger et al's outpost tested water in dolomite saturation at 4489-4507 feet. The hole has been plugged back to 4020 feet to complete in the regular Strawn, with 5½-inch pipe at 3904 feet. Shell Oil Company and Phillips Petroleum Company's Griffin 21-E, south offset to the most northwesterly deep producer, entered the Ellenberger at 4434 feet, four feet high, and logged saturation at 4438-44 feet followed by hard dry lime to 4447 feet. Production test was under way with 5½-inch at 4430 feet.

Development of the Ellenberger is assuming important proportions, as the 60-barrel per well base allowable daily is more attractive to operators than Strawn wells at 32 barrels daily, while the deeper wells only cost about $2000 more. Consolidated Oil Company has authorized drilling Ferguson 28, 29, 30, 31 and 32, to be located near its two completed Ellenberger producers, Buffalo Oil Company has authorized drilling three deep wells on the west line of its Ferguson lease and Block 9. Consolidated Oil Company's Barnes 2-B, prospective Mississippian lime producer on the northwest edge of Strawn production, tested water at 4613-27 feet. It is the first in the area to definitely encounter Mississippian, topped at 4593 feet, and the fact that this zone is present is attributed to its low structural position and abnormally thick section of Strawn.

East Texas

Three Woodbine Wildcats Finaled as Failures

Three Woodbine wildcats were completed as failures, including a test on the faulted Bazette structure, northeastern Navarro County, where intermittent prospecting has occurred since 1925. Lyman T. Davis' Fee 1, T. J. Jordan Survey, a mile southwest of the town, showed salt water on swabbing test after running pipe on the strength of promising oil show in sand at 3080-83 feet.

Sells Petroleum, Inc., and Delta Drilling Company's Kay 1, northern Smith County prospect and five miles south of Hawkins, found water in the Woodbine, and quit at 5361 feet. In Rains County, L. L. Prick et al's Grimes 1, five miles northeast of Emory, abandoned at 4892 feet in Woodbine topped at 4450 feet.

The Hawkins field finished the month with 35 completed wells, including two gassers near the center of the dome. Late completions involve northeast extensions on acreage held by Humble Oil & Refining Company, which has eight flowing wells and the gassers. Ponder 1, northeast part of Jas. Pollock Survey, flowed 301 barrels of 26-gravity oil on 18-hour gauge through ¼-inch choke from casing perforations at 4895-98 feet. This outpost was drilled to 4963 feet to establish the water level, and perforations at 4914-17 feet yielded water. Top of Woodbine series was called at 4585 feet, with elevation of 442 feet. The company's N. M. Shamburger 1, between the above well and the discovery pumper, flowed 259 barrels of 25-gravity oil under the same conditions from perforations, with hole bottomed at 4862 feet.

Hawkins townsite officials have passed an ordinance requiring payment of $250 for each well permit. Bulk of the field activity centers upon the townsite. A greater allowable is in store for owners of small producing tracts, with the commission on record as favoring the granting of at least half the quota given wells on 20-acre units. The latter have been on a base allowable of 111 barrels daily per well. Humble Oil & Refining Company is preparing to launch development of its townsite tract including a string of wells along the railroad right-of-way.

Sun Oil Company's Friedlander 1, east outpost for the north portion of the Chapel Hill field, proved dry in the Travis Peak sandstone at 8414-34 feet, with elevation of 487 feet, and has landed pipe near bottom to perforate opposite oil saturation passed up in the Pettit series.

Texas Gulf Coast

Wharton Wildcat Sets Casing; Dual Completion at Dyersdale

W. R. Davis & Company has indicated possibility of discovery of a field in the Lakeview Area, north of El Campo, with Hortman 1, which has set 7-inch casing at 4583 feet and will try to complete in an upper Frio sand. This test was drilled to 6752, ran electric log, and took side wall samples of all likely looking sands. The log and samples checked results of earlier coring in a sand at 4535-39 feet, although at that time only two feet of sand was recovered in the cores. The log showed only four feet of sand present, but the sand is apparently nicely saturated and may make some kind of a well. This sand is considerably deeper than the 3100-foot sand from which Smith & McDannald several years ago completed a shallow gasser in a well several miles east of this test. W. R. Davis & Company owns a large block of acreage in the area, and it and several other companies have been doing extensive geophysical work in the vicinity for the past several weeks.

In western Colorado County, Shell Oil Company's Plow Realty Company 3, northeast of production about 1500 feet, has been completed in a new sand. The first three wells in the area are in an 8100-foot sand, and this test was drilled to 10,251 feet to prospect through the Wilcox. It stuck drill pipe at that depth, however, and came back up the hole to complete at 9344-55 feet, making straw-colored distillate to open a new sand. After testing from this sand, it killed, and came still further back up the hole to test an intermediate sand, this final completion being from perforations at 8746-56 feet. It made 144.63 barrels of 55-gravity oil daily through a ¼-inch choke with tubing pressure 1675 pounds and casing pressure 1850 pounds, gas/oil ratio 12,000/1.

In the Garwood Area, W. R. Davis & Company's Brownson B-1 was coring below 6100 feet through the Cockfield-Yegua section, before drilling to the Wilcox from which Brownson 1 was completed.

Jack Frazier's Susan Dwyer 1, ¾-mile northwest Dyersdale field extension test, Harris County, was being completed through two different sands, one flowing through tubing, and the other through casing. The regular field pay, at 4059-70 feet, was being produced through tubing at the rate of 75 barrels daily through a ¼-inch choke, with volume slowly building up, while the upper sand, with casing perforated at 3488-96 feet, was being flowed through casing. It was only about half clean, and making about 12 to 15 barrels of oil daily. Frazier will apply for a permit for dual completion of this well. The upper sand is a new pay for the field, as it has carried only gas when cored in other wells.

Strake Petroleum, Inc.'s wildcat at Halls Bayou was setting oil string for the third time. It is in the third side-tracked hole, having drilled the upper sand at 10,315-333 feet and continuing down into the lower sand, stopping at 10,389 feet, still in the sand. It was running 5-inch casing to set to bottom.

Superior Oil Company's Bordages 1, on the northwest flank of the Fannett Dome, cored the sand at 8376-8405 feet from which Gulf Oil Corporation's deep production comes, but will make a test of the Frio. After setting 10,078 feet of casing, it was drilling below 10,500 feet, and will go through the Frio to test the deep beds comparable to Old Ocean and other downdip fields.

Jordan Drilling Company made location for a Wilcox test near the town of Dollardsville, southeastern Polk County, 13 miles northwest of the Segno Field in I&GN RR Survey, Section 25. Contract depth of 7500 feet should give a good test of the Wilcox.

Southwest Texas

Deeper Discoveries Reported In Several Old Areas

More new deep discoveries were being uncovered in present fields along the Southwest Texas Gulf Coast. One may result in the deepest zone in this territory and the first below 10,000 feet.

A string of 5½-inch liner had been run to 10,469 feet in Bay-Tex Oil Corporation and Atlantic Refining Company's McColloch 1, on the northeast flank of the McCampbell field, Aransas County. Tests are to be made up the hole through perforations, the first to be just above 10,300 feet. Below 10,000 feet, the well has encountered a series of sands broken by shale streaks and pressure has been high. One sand section more than 20 feet thick was reported to be solid. Deepest production in South Texas is in the Saxet field, where one well is producing from 9936 feet.

Continental Oil Company's St. Charles Company 3, on the St. Charles structure in Aransas County, continued its tests, but was not too promising. After plugging back from 11,472 feet, sidetracking to 9493 feet, perforations were made at 9308-28 feet. It tested 220 barrels of fluid per day through 3/16-inch choke, a third of which was oil and the rest salt water. Gas flow was coming in under 4225 pounds tubing pressure. Casing pressure was 4600 pounds. A squeeze job will be made for additional tests.

R. H. Hawn has opened a new sand and expanded the Stratton field's east flank production one mile north with Bush-Wofford 1. The test practically merges the production of this field with the Agua Dulce area, Nueces County. The well, in Section 205, logged a sand at 7001-16 feet and casing was set at 7210 feet. Perforations were made in the top 5 feet of the horizon and the well was flowing several barrels of fluid, mostly oil, per hour, while cleaning. While on a 5/32-inch choke, pressures were at 1150 and 1850 pounds on tubing and casing, respectively.

On the same general trend, but east of the Agua Dulce field, Taft Oil Company's Wolter 1, Section 81, was testing a sand at 6910-35 feet, casing having been set on bottom at 6937 feet. Perforations were made in the zone, but details of the operation were not known.

Two miles northeast of the Agua Dulce area, W. B. Osborn and Mid-Continent Petroleum Corporation's Burow 1 was shut in after flowing distillate under a high gas/oil ratio from perforations 6712-14 feet. It is to be reworked.

Pure Oil Company has established a second oil zone in the West Ganado field of Jackson County by the completion of Frank Spacek 2, ¼ mile southwest of the discovery. The well was finished through perforations at 5986-98 feet where 60 shots had been made and on a 24-hour gauge, it flowed 168 barrels of 32.4-gravity oil. Flow was through 10/64-inch choke with pressures equalized at 920 pounds. Hole was drilled to 6818 feet. The same sand is producing distillate in a well on the east side of the structure. This well also uncovered a shallow horizon between 4700-90 feet, which showed oil on drill-stem test.

Magnolia Petroleum Company's Seeligson 1, Unit 4, discovery of the South Premont pool of Jim Wells County, was officially gauged flowing 106.65 barrels of 40.3-gravity oil per day through ⅛-inch choke with 700 pounds tubing and 1725 pounds casing pressure, no water and gas/oil ratio 450 to 1. The well first was tested through perforations in sand topped at 5019 feet, where it developed a high gas/oil ratio. Hole was drilled two feet below the casing seat to 5040 feet and the well completed.

In Refugio County, a 4000-foot northwest extension to the new Woodsboro field is anticipated as Southern Minerals Corporation tests Boenig 1. It was drilled to 6795 feet and electric log indicated a zone at 5880-89 feet. Casing was landed at 6710 feet and production attempt was under way. The discovery well topped the sand at 5900 feet.

Tom Graham Oil Company's Blumberg 1, west outpost to the East Mathis field, San Patricio County, was testing a new sand for the field logged at 5138-48 feet. After drilling to 5717 feet, perforations were made at 5146-49 feet and the well was cleaning and making gas and distillate through 5/32-inch choke with 980 pounds tubing and 1440 pounds casing pressures.

Gulfboard Oil Corporation's test 10 miles east of Seadrift in San Antonio Bay was not meeting with too much success. State 1, Tract 177, Calhoun County, made oil and salt water through perforations at 6324-29 feet and again at 6299-6303 feet. Other tests up the hole, including one around 2900 feet, were not satisfactory.

Second Level at Sheridan

Sheridan field in Colorado County became the first field in the southwestern section of the Wilcox trend to produce from more than one sand in that horizon when Shell Oil Company completed Plow Realty Company 3 as a distillate producer through perforations at 8746-56 feet, 800 feet below the top of the Wilcox. The regular field sand is just below 8100 feet and produces oil. A northeast outpost to production, the hole was carried to 10,251 feet and 5½-inch liner set at 9980 feet. Perforated at 9345-55 feet, it flowed 250 barrels of distillate per day and a large volume of gas. This showing was 1400 feet below the top of the Wilcox. Perforations were squeezed in favor of final comple-

tion in the new 8700-foot pay, resulting in a flow of 144.63 barrels of 55.4-gravity distillate per day through ¼-inch choke; 1675 pounds tubing and 1850 pounds casing pressure; gas/oil ratio 12,000 to 1.

In Live Oak County, Edwin M. Jones' West 3-B, 4 miles southwest of George West, has completed rigging up after a blowout at 9039 feet wrecked the derrick and equipment. The new equipment was required for the continuance of the exploration. It is anticipated that the hole will be washed to bottom and an attempt made to test this zone. The hole then would be drilled ahead.

Starr County Program 110 Wells

Continental Oil Company will drill at least 110 more wells on the Rincon structure in Starr County during 1941, the work to include 8 active rigs until the conclusion of the project. This became known with the filing of intentions to drill tests on the Slick, Davenport and Davis lands. The company acquired a half interest and operating rights in the field from W. R. Davis, Inc., several months ago and since that time has been actively exploring the various producing levels. The area's potentialities are considered to be well determined, hence the drilling campaign is to be carried on as rapidily as possible. At least 12 completions per month are expected.

Duval County Field Commercial

Kreis pool of Duval County apparently has been proved of commercial proportions by Bridwell Oil Company's Escapole 1-B, which cored a saturated oil sand in the Loma Novia series at 3204-12 feet. A drill-stem test of the section recovered 1400 feet of 29.5-gravity oil, 25 pounds pressure and no water in 15 minutes. The test was made through ⅜-inch chokes. Casing was landed at 3204 feet.

The well is in the northeast corner of a 242-acre lease, GH&H Survey 75 and is 7000 feet southwest of Ike Howeth's Kreis 1. The latter well had the same sand at 3246-54 feet and on a swabbing test made 35 barrels of 29.2-gravity oil per day. It has produced a limited amount of oil, but is not on regular production.

Elgin Well Pumps 104 Barrels

Finally completed as a producer, Marts & Beaven's Walker 1-A has established the Elgin prospect in the extreme north end of Bastrop County as a new oil field. The discovery is located in the George Glasscock survey, four miles east of Elgin. It topped the Austin chalk at 2600 feet and found a broken section at 2830-50 feet, apparently a crevice. The well then encountered a showing of gas with an oil odor in the Edwards limestone at 3328-52 feet. Plugged back to 2920 feet and acidized, the well pumped 104.7 barrels of 36.8-gravity oil per day along with 16 percent salt and acid water.

A new well is being drilled by this operator on the Cheney tract, 3000 feet northeast of the discovery.

JOHN H. TONEY, 31, Odessa, Texas, district production foreman for Sinclair Prairie Oil Company, was accidently asphyxiated April 24 while checking stock tanks at a big producer completed by the company as an extension to the Foster field. He was formerly stationed in the Thrall, Kansas, district.

Louisiana Gulf Coast

Plaquemines Parish Wildcat Finaled as Pool Opener

Although assuring the Louisiana Gulf Coast a new oil field about two weeks ago when a drill-stem test produced at the rate of 129 barrels oil daily, The Texas Company's State 1, on the Octave Pass prospect, was not completed until last week. Initial production gauge was 195 barrels of 36.1-gravity pipe-line oil daily on a 5/32-inch choke. Gas/oil ratio was 1981/1, and tubing pressure showed 1300 pounds. The new perforations were made at 11,370-450 feet. The 129-barrel gauge was through perforations at 11,420-450 feet. Total depth is 11,494 feet, with 7⅝-inch casing set at 11,042 feet and a string of 643 feet of 5-inch liner set down to bottom. This brings new pools discovered in 1941 to seven, the other six being Westwego, Jefferson Parish; St. Gabriel, Iberville Parish; Lakeside (Lowry), Cameron Parish; Belle Isle Dome, St. Mary Parish; Port Allen, West Baton Rouge Parish, and Pine Prairie, Evangeline Parish.

The Texas Company's State 1, in the Delacroix Island area, was waiting on cement after plugging back to 8950 feet from bottom at 11,165 feet. Tests are now being conducted, and so far nothing but salt water has shown.

Stanolind Oil & Gas Company let drilling contract to Dixie Drilling Company on a new Terrebonne Parish wildcat in the Southdown area. Materials have started to move in. Location is 3700 feet north of Shell Oil Company's Realty Operators 1, dry below 10,000 feet. Location is in Section 102-17s-17e. Probable contract depth is 11,000 feet.

The first deep test of a two-well program in the Bourg area, Terrebonne Parish, has been abandoned at 11,632 feet. The well, Sinclair Prairie Oil Company et al's Aragon Plantation 1, ran electric log to bottom, but no shows were reported. An earlier electric survey reported some saturation at 9333-9349 and 8112-22 feet, but after taking side-wall samples of the sands, nothing of importance was found. Location for the second test is expected after correlation work is completed.

Erath May Have New Sand

A new producing sand looms in the deep Erath field in Vermilion Parish as Phillips Petroleum Company started testing its Dugas 1. The well, an east offset to the discovery of The Texas Company, has pipe perforated at 11,618-11,620 feet and was, at latest report, cleaning into pits through a small choke.

On the north flank of the Anse La Butte field in St. Martin Parish, I. N. Pharis' test well resumed operations and drilled to 6118 feet in salt topped at 6060 feet. The operator has set a string of 5½-inch casing for tests after being unable to take side-wall samples. The sand to be tested has not been reported. However, the bit drilled a sand at 5398-5407 feet which is reported to have possibilities.

A new wildcat location has been made by Harbor Oil Company in the Bayou Sale area, St. Mary Parish. This location, in Section 14-16s-9e, is east of the Humble Oil & Refining Company wildcat now drilling at about 10,800 feet. The new location is in Leopard Bayou, and was made after the state awarded this tract to Harbor Oil Company.

The Sparta-Wilcox trend received a set-back during the week when Navarro Oil Company et al abandoned Cooper 1 at 7035 feet in the Wilcox. Top of the Wilcox was picked at 4658 feet and showed water, as did the Sparta and the Cockfield.

Superior Oil Company's Miami Corporation 1, wildcat in Cameron Parish which has tested gas and distillate in two 10,000-foot horizons, was drilling below 10,700 feet.

A new 4000-foot northern outpost in the Darrow dome was staked by the Humble Oil & Refining Company. It is J. F. Webb 1, Section 26-10s-2e.

North Louisiana

Four Olla Trend Wildcats Staked; Leasing Increases

Although the completion list in North Louisiana continued somewhat abbreviated last week, four new wildcat locations in as many parishes and on the Olla Trend three of them were staked, indicating the anticipated spring drilling campaign that had been held up for several weeks by rains and high water, was getting its stride. Leasing activity also showed an increase, with several new wildcat blocks reported assembled.

In Catahoula Parish, on the trend seeking Wilcox production, Louark Producing Company and Phillips Petroleum Company made location for the second of a series of wildcats, at Tensas Delta B-1, SW SE NW 15-5n-5e. In LaSalle Parish, also on the trend, Herschell R. Scivally located Louisiana Delta Hardwood 1, NE 12-6n-4e.

In the Ajax area, Natchitoches Parish, where a small 3200-foot well was recently completed for five barrels daily, later increasing to 20 barrels daily, E. R. Demetrio started moving in for J. J. Winn 1, C SE NW 25-10n-10w. Three tests drilled before the small discovery had good oil showings. Discovery is in Section 18-10n-10w.

Below the Angelina-Caldwell flexure and in the southern part of Sabine Parish, K. E. Merren, Shreveport, made location for Nona Mills 1, Section 28-3n-12w. Merren has a 5000-acre block. The test will seek production in the Wilcox, to be the first Wilcox test in this parish drilled since discovery of Wilcox production at Olla and the other shallow fields in LaSalle Parish.

John G. Mayo, Houston, is planning a wildcat test in Section 14-23n-7w, Claiborne Parish, northeast of Haynesville and near a wildcat block held by Magnolia Petroleum Company.

In DeSoto Parish, around Section 6-11n-14w, The Hunter Company plans to drill a Glen Rose test and has asked for bids for the operation. Four miles southeast of Logansport, DeSoto Parish, Superior Oil Corporation has been securing leases around Section 18-11n-15w.

In Grant Parish in the Olla Trend, J. A. Wainwright is assigning a block

of 2500 acres of wildcat leases in Township 5 north, Range 1 west, to Stanolind Oil & Gas Company, which Company worked this area with gravimeter.

Lide & Greer, Dallas, and Herman L. Brown, New York, are negotiating with several companies for co-operation in drilling to 15,000 feet, or into the Smackover lime, in Arkansas-Louisiana Gas Company 1, NE SE 11-17n-4w, Lincoln Parish wildcat. The test was down to 9915 feet.

Natchitoches Parish saw another wildcat block assembled, in Township 8 north, Range 7 west, consisting of 4000 acres assembled by J. B. Ferguson. In Red River Parish, two miles north of Coushatta, C. E. Elliott, Houston, leased 3500 acres around Section 12-12n-10w.

Delta Drilling Company's third 2600-foot test at Greenwood, Caddo Parish, was abandoned last week, marking limits of the shallow horizon north of the two present small gas wells. Next location in the series will be south or west. Abandoned hole was in Section 13-17n-16w.

Arkansas

Plan Smackover Tests in Ouachita, LaFayette Counties

Arkansas - Louisiana Gas Company plans to start within three weeks on a Smackover deep lime wildcat test in Ouachita County, near Section 31-14-18, four miles northeast of a failure drilled several years ago by Deep Rock Oil Company that logged some saturation in the deep lime.

In LaFayette County near Stamps, The Ohio Oil Company was considering drilling a Smackover lime test on a wildcat block centering around Section 15-16-23. A wildcat location was staked last week and rig installed in Section 35-6-9, Jefferson County by Patterson & Patterson for F. D. Stratton 1. Christmas, Coker & Grieves, who have been drilling a series of shallow wildcats in Clark County, abandoned one of the series last week.

In the Urbana field, Union County, Arkansas Southern Oil Company's Simmons A-3, NE NW 13-18-13, drilled to 2957 feet, was completed as a small oil well in the Nacatoch sand, a new horizon for that field.

Mississippi

South Tinsley Extended One-Half Mile East

An eastern ½-mile extension of the south end of the Tinsley Dome field, Yazoo County, appeared likely last week after Roeser and Pendleton's Wise 1, SW SW 32-10n-2w, showed 1760 feet of oil and 305 feet of salt water in an 8-minute drill-stem test at 5053 feet. A ⅜-inch choke was used on bottom, and ¼-inch choke at top, with eight pounds working pressure. The test logged top of chalk at 5014 feet, and topped Woodruff sand at 5032 feet. Tool was set at 5039 feet.

Eight new locations were announced in Tinsley Dome during the last week. Phillips Petroleum Company made its entry into the field with acquisition of a test in Section 6-10n-2w. Three new producers were completed, and three other operations were at the testing stage.

Mississippi Production Reported

Cumulative production of the Tinsley Dome field since August 29, 1939, when it was discovered, and the Pickens field, both in Yazoo County, to April 1, 1941, was 6,354,189 barrels, according to H. M. Morse, state oil and gas supervisor. Eleven companies have production at Tinsley Dome, while all production at Pickens, from four small wells, is owned by Sinclair-Wyoming Oil Company. The Tinsley Dome yield was 5,999,946 barrels, and the Pickens yield was 354,243 barrels.

Union Producing Company, discoverer of Tinsley Dome, had 82 wells in that field including two in which it owns half interest with The Texas Company and Magnolia Petroleum Company. Other operators in the Tinsley Dome are J. P. Evans, Hassie Hunt, W. B. Johnson Drilling Company, E. C. Johnston, Jones-O'Brien, Inc., Love Petroleum Company, Magnolia Petroleum Company, The Texas Company, Slick-Urschel Oil Company and Sylvian Producing Company.

Standard Oil Company of Louisiana is the major purchaser of Tinsley crude. E. C. Johnston runs approximately 39,000 barrels monthly through his Vicksburg refinery.

Michigan

St. Peter Test in Shallow Area Commands Interest

As Gulf Refining Company's deep test in Bay County has been the focal point of interest for basin operators this year, a prospective St. Peter sand well in Kent County is drawing wide interest from west side shallow field development companies.

Producers Deep Well Company has been organized by Neil Wagonaar, Grand Rapids, to make the first deep test in the Grand Rapids shallow (1700-1900-foot) pool. Contract for drilling with cable tools has been let to Smith Petroleum Company, and drilling is to start this month. Wagonaar said the test, expected to go to 5100-5300 feet, will be financed "on a cooperative contribution plan" by companies owning leases in the field. He has asked for a contribution of $3 per acre. Contributions will be in the form of outright "bottom hole" gifts and will not constitute payments for stock in the deep hole corporation. Wagonaar said that besides companies with leases in the field, "assessments" will be made against pipe line companies, refineries and "any others with a direct financial stake in the field."

The Grand Rapids field, discovered in 1938, is the largest known shallow structure in southwest Michigan. It is now at about the end of economic development. Approximately 470 wells are producing from the Traverse, with the field cov-

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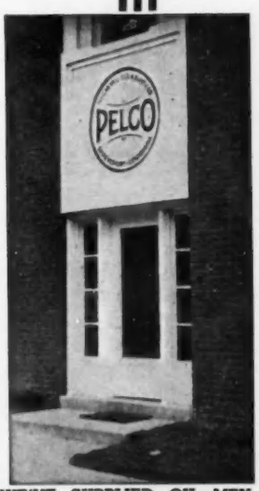

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ering about 4900 acres. Recovery to March 30 was approximately 1500 barrels an acre. It has produced about 7,500,000 barrels of oil, and at the present time is down to approximately 4800 barrels per day.

One of the closest correlating tests below the Monroe limestone (2200-2400 feet) will be Sun Oil Company's Kidder 1, Section 8-3n-9w, Barry County, which was drilled into the St. Peter sand last year. Kidder 1 logged the St. Peter at 4960 feet, with the sand showing free oil. It was abandoned at 5013 feet. Location is on the same trend as the proposed Grand Rapids deep well, about 30 miles southeast. Two other St. Peter tests were drilled in 1929-30 northwest of the proposed well in the Grand Rapids field. Michigan Petroleum Company drilled to 6310 feet, with St. Peter at 5503 feet, in Section 6-9n-13w, Ottawa County, and Muskegon Oil Corporation carried a test to 4754 feet, with St. Peter at 4735 feet, in Section 8-10n-16w, Muskegon County.

Completions in Michigan were down to 8 for the week, but new starts were slightly improved with 17. One of the completions included Sun Oil Company's Watson 1, NW NE NW 26-24n-2w, Roscommon County, a structurally high wildcat. It was abandoned at 3033 feet after failing to show oil saturation in the objective Dundee.

Seba Oil & Development Company's Zischke 1, Section 14-5n-3w, Clinton County, was shut down for orders at 4952 feet at the base of the Salina salt, with an oil show reported at that point.

California

Difficulties Halt Los Angeles Area Test, Second Started

After encountering mechanical difficulties in a formation test, Barnsdall Oil Company suspended operations on No. A-17-1, wildcat on its Honor Ranch lease in the Castaic-Newhall area of Los Angeles County, and has staked location for a second test ¼ mile southwest. Findings in the first test were sufficiently encouraging to induce the company to stake the second test. No. A-17-1 was bottomed at 4717 feet in shale, with faulted conditions encountered at bottom and at two other points up the hole. Formation test run at 4335-4717 feet, with valve open 28 minutes, resulted in fair blow of gas with recovery consisting of nine stands of gas-cut muddy oil and no water. Location is in Section 5-4-16.

In Section 14-3-16, The Texas Company spudded a wildcat, Whitnah 1. In Section 6-3-16, Axtec Oil Company was drilling below 2725 feet in Sanborn 1, wildcat.

Four miles southeast of the Castaic area, R. E. Havenstrite's Lincoln 3, in the Del Valle field, Section 16-4-17, was preparing for a formation test from 7270 feet to bottom at 7425 feet. While failing to pick up the productive sands encountered in the discovery area, Lincoln 3 also encountered fair looking oil sand at 7350-90 feet.

Tide Water Associated Oil Company abandoned Olive Orange 1, wildcat in the Olive area of Orange County, Section 19-4-9, after bottoming in basalt at 4509 feet. Top of the basalt was placed at 4366 feet, above which well cored shale and streaks of grey sand.

In the Pyramid Hills area of Kings County, Tide Water Associated Oil Company's West Slope 76, wildcat in Section 20-24-18, was being cored below 1548 feet in grey sand. Oil-stained sand was topped at 938 feet, continuing to 1048 feet, with silty oil sand encountered from 1049 to 1203 feet, grading into shale and then into grey sand.

In Section 18-29-25, midway between the Buttonwillow gas field and the West Greeley field in Kern County, The Superior Oil Company staked location for a deep test on holdings of Kern County Land Company.

The Ohio Oil Company was coring in sandy shale at 5350 feet in KCL G-1, wildcat in Section 36-29-26, McClung area, Kern County. Formation test of sand cored between 5162 and 5197 feet resulted in heavy gas blow, but the recovery consisted of 3907 feet of muddy salty water. Top of sand was placed at 5177 feet. In Section 3-30-26, Union Oil Company was drilling in shale at 10,419 feet in its Kernco 31-3 wildcat.

LONNIE KING, 42, co-owner and manager of the Moutray-Kink Drilling Company, died April 28 at Abilene, Texas, where he had resided for a decade, from complications arising from the flu. He was at one time a star baseball pitcher, and worked in the geological department for the Texas Pacific Coal & Oil Company and Prairie Oil & Gas Company before 1933.

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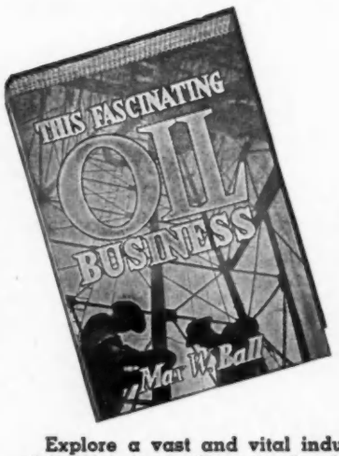

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UNITED STATES WELL COMPLETIONS

Arkansas

Company, Well and Location	Init. Prod. Bbls.	Depth
Clark County (Wildcat)—		
Christmas, Coker & Grieves, Sparkman 1, 7-11-20	*	587
Nevada County (Troy)—		
Berry Asphalt Co., Fincher 7, 10-14-20	35	1262
Union County (Urbana)—		
Arkansas So. Oil Co., Simmons A-3, 13-18-13	30	2957
R. T. Adams, Winn Est. 1, 10-18-13	*	3200

California

Company, Well and Location	Init. Prod. Bbls.	Depth
Kern County (Coles Levee)—		
Standard, KCL 20-8 (pb 9446)	25	9660
Kern County (McKittrick)—		
Franco-Western Oil Co., No. 20 (pb 2336)	No Est.	2385
Los Angeles County (Castaic)—		
Hathaway Co., Ram 1	110	2594
Los Angeles County (Rosecrans-Athens)—		
Union, Rosecrans 44	157	6578
Los Angeles County (Wilmington)—		
Long Beach Oil Dev. Co., No. 24	342	4230
A. D. Mitchell, Canal 1	No Est.	3642
Union Pacific, UP 165	2429	3475
Los Angeles County (Wilmington-Torrance)—		
De Marsh Oil Co., Phillips 1	125	3760
Orange County (Huntington Beach)—		
Signal, Signal-Bolsa 21-A (pb 3443)	216	3652
Santa Barbara County (Capitan)—		
Shell, Covarrubias 1-33	863	1300
Santa Barbara County Santa Maria Valley)—		
Union, Le Roy 6 (pb 5045)	125	5306
Ventura County (San Miguelito)—		
Continental, Grubb 22	2325	7008
Ventura County (Ventura Avenue)—		
Tide Water, VL&W No. 51	1051	7890
OLD WELLS DEEPENED		
Los Angeles County (Long Beach)—		
Union, Oil Operators 4 (otd 4408)	37	5379
Los Angeles County (Montebello-West)—		
Beverly-Montebello Oil Co., Beverly 1 (otd 7660)	20	7720
Los Angeles County (Rosecrans)—		
Royalty Ser. Corp., Gordon 2 (otd 7783)	300	8450
Los Angeles County (Wilmington)—		
General Pet., Terminal 11 (otd 2930)	240	5425
Royalty Ser. Corp., Price 2 (otd 2658)	No. Est.	3680

*Failures; †Junked; ¶Million cu. ft. gas.

Illinois

Company, Well and Location	Init. Prod. Bbls.	Depth
Clay County—		
A. R. Madden, Ging 1, se ne 17-5n-53	100	2389
Clinton County—		
P. Mosebach, Schlarmann 1, ne nw nw 9-1n-3w (pb 2460)	66	4213
Strawser et al, Winkler 1, se nw sw 25-1n-4w	*	1140
Edwards County—		
Bauman Dr., Huber 1, se ne ne nw 18-2s-11e (pb 3055)	22	3106
Fayette County—		
Carter, Miller 2, sw nw se 1-8n-3e	72	1525
Franklin County—		
E. S. Adkins, Orient Coal 4, nw sw se 24-6s-2e	363	2138
McKemie 2, sw ne ne 25-6s-2e	214	2157
Simpson 2, nw ne nw 25-6s-2e	360	2116
Wegener, C. W. & F. Coal 4, se sw sw 24-6s-2e	425	2128
Shell, Doty 4, se sw nw ne 25-6s-2e	309	2153
W. O. Morgan, Minier 1, nw nw ne 36-6s-2e	912	2167
Sun, Oil Ben Coal Co. 1, se ne ne nw 13-8s-2e	*	2780
Hamilton County—		
Sinclair-Wyoming, Gage 2, nw sw ne 34-3s-5e	142	3350
Texas, Edwards 1, nw nw sw 2-6s-6e	164	3061
Carey 2, sw se nw 3-6s-6e	292	3063
Carey-Hood Comm., nw se nw 3-6s-6e	119	3069
Edwards 10, se se ne 3-6s-6e	125	3063
Hood 10, se ne nw 3-6s-6e	157	3038
Hood 11, sw ne nw 3-6s-6e	187	3053
E. S. Adkins, Fed. Chem. & Coke Co. 1, nw nw se 17-7s-6e	*	3266
Ohio, Matheny 8, sw sw se 3-6s-6e	233	3075
Moore 4, sw ne sw 3-6s-6e	142	3055
Jasper County—		
Pure, Maginn 1, w½ ne se 5-5n-10e	189	2805
Grove 3, w½ se ne 31-5n-10e	435	2860
Eckl 1, w½ sw sw 9-6n-10e	*	2827
May 2, w½ ne ne 17-6n-10e	214	2785
Richland County—		
Pure, Borah 1, se ne nw nw 12-2n-9e	*	3185
Kermicle 3, e½ nw nw 5-4n-10e (pb 2817)	*	2890
Wabash County—		
Harris & Cohen, Smith 9, sw se nw se 9-1n-12w	140	2007
G. Hayes Dr. Co., N. Y. Cent. RR 2, ne se se nw 1-1n-12w	10	2040
Parker & Co., Sturgeon 1, ne nw ne 12-1n-12w (pb 1424)	*	2286
Shell, Trapp 2, nw se sw nw 17-1s-12w	86	2082
Straube et al, Gilliam 1, nwc sw 17-1s-12w	103	1574
Babler-Hull, Heink 2, se sw se ne 18-1s-12w	105	2074
Menefee, Seals 1, sw nw nw ne 20-1s-12w	155	2044
E. O. Olds, White 1, se ne se ne 20-1s-12w	60	2440
Ill-Mid-Cont., Bancroft School 3, sw nw ne 20-1s-12w	40	1552
Keiffer 1, sw sw ne 32-1s-12w	*	2507
Washington County—		
Kingwood, Bring 3, sw se se 15-1s-1w	27	1536
Magnolia, Rahn 9, nw ne ne 22-1s-1w	134	1536
Stern 1, se se se 34-3s-3w	*	1562
Harry Hubbard, Harre 1, sw sw sw 1-3s-4w	*	1357
Wayne County—		
Pure, Michel 1, c e½ se ne 35-2n-7e	35	3075
Garrison 5, c e½ ne sw 36-2n-7e	45	3085
Texas, Boggs 7, c s½ sw sw 9-3s-7e	*	3412
New Penn Dev., McKeyes 3, sw se ne se 19-3s-8e	50	3245
White County—		
French et al, Hon 2, sw ne se 32-3s-14w (pb 2735)	120	3007
Texas Co., Poorman 8, se se sw 32-3s-8e	37	3396
W. A. Schuler et al, Smith 1 se se sw 5-4s-14w	265	2875
Pure, Potter 13, se nw nw 9-4s-14w (pb 2672)	140	2845
Stroube & Stroube, Boultinghouse 2, sw se nw 16-4s-14w (pb 2737)	95	2973
W. Duncan, Hughes 3-A, ne ne se 17-4s-14w	*	2593
Paul Miller, Ford Hrs. 4-B-1, sw nw nw 21-4s-14w	50	2238
Superior, Fitton 3, se se se 28-4s-14w	175	2725
Ford 5, nw sw ne se 28-4s-14w	60	2845
Ford 7, nw se sw 28-4s-14w	250	2923
Tide Water, Dennis 17, ne ne ne 33-4s-14w	310	2732
Sun, Henning 1, se sw nw 33-4s-14w	147	2724
Brown 2, c s½ sw ne 2-4s-9e	25	3408
Phillips Pet., Garr 3, sw nw sw 36-4s-10e	20	2007
McBride, Inc., Golden 1, ne nw se 29-5s-14w (pb 2939)	*	3078
L. B. Jackson et al, Parker 1, sw nw nw 35-5s-10e	*	3174
Hiawatha Oil Co., Vail 2, ne nw se 19-7s-11e	50	2459
Stinson 3, se se nw 19-7s-11e	50	2255
Williamson County—		
Union Mining Co., Henderson 1, sw sw nw 10-9s-2e	*	1507

[*Continued on next page*]

Summary of Drilling Operations in the United States, Week Ended May 3, 1941

	WELLS COMPLETED								*PERMITS FOR NEW WELLS				
		New Wells Drilled for Oil and Gas											
	Total for Week	Oil Wells	Gas Wells	Failures	†Miscellaneous	Initial Production	Total 1941	Total this Date 1940	This Week	Total this Month	Total 1941	Total this Date 1940	Year Total 1940
Arkansas	4	2	....	2	....	65	55	70	3	21	54	46	153
California	18	18	....	....	....	8,365	370	381	25	115	328	377	1,042
Colorado	.....	....	....	....	....	.....	6	3	....	.....	.....	.....	.....
Illinois	77	50	....	15	12	9,062	1,087	1,213	105	416	1,354	1,357	4,532
Indiana	9	1	1	6	1	20	162	132	....	.....	.....	.....	.....
Kansas	45	34	1	10	....	42,426	671	564	47	227	651	663	2,048
Kentucky	20	9	....	10	1	308	102	87	....	.....	.....	.....	.....
Louisiana	28	16	....	12	....	2,630	454	539	40	169	529	566	1,658
Michigan	8	4	....	4	....	465	266	443	17	75	267	429	1,093
Mississippi	3	3	....	....	....	1,605	49	53	....	.....	.....	.....	.....
Missouri*	2	....	....	2	....	.....	4	3	....	.....	5	.....	26
Montana	2	2	....	....	....	245	66	47	....	.....	.....	.....	.....
Nebraska*	3	1	....	2	....	.....	31	.....	1	8	25	.....	69
New Mexico	6	5	....	1	....	276	119	275	8	36	131	251	559
New York	15	11	....	....	4	71	229	385	....	.....	.....	.....	.....
Ohio	37	6	13	12	6	60	533	264	....	.....	.....	.....	.....
Oklahoma	56	32	4	15	5	9,351	677	766	47	231	640	685	1,888
Pennsylvania	52	32	8	2	10	45	727	1,304	....	.....	.....	.....	.....
South Dakota	.....	....	....	....	....	.....	....	1	....	.....	.....	.....	.....
Tennessee	.....	....	....	....	....	.....	....	7	....	.....	.....	.....	.....
Texas	201	147	6	47	1	91,542	3,119	3,602	258	1,291	3,653	4,412	11,170
Utah	.....	....	....	....	....	.....	....	1	....	.....	.....	.....	.....
West Virginia	16	4	9	1	2	7	238	194	....	.....	.....	209	782
Wyoming	3	....	....	....	3	1,675	36	56	....	.....	.....	.....	1
Total this week	605	377	42	141	45	168,218	9,001	10,390	551	2,589	7,637	8,995	25,021
Total last week	580	356	42	152	31	146,734	8,396	9,780	479	2,041	7,086	8,339	25,021
Total this year	9,001	5,732	784	2,065	420	.....	....	.....	....	.....	....	.....	.....

* This tabulation includes those states where weekly data are available; figures for Missouri date from August 10, 1940; Nebraska from August 3, 1940.
† Includes old wells deepened, water-intake, gas input, and salt water disposal wells.

United States Well Completions—*Continued*

ILLINOIS—Continued

OLD WELLS DEEPENED

Edwards County—
Tide Water, Gawthrop 1, ne ne ne 13-1s-10e (otd 3325) 176 3378
Hamilton County—
Ohio, Grimes 2, sw nw nw 2-6s-6e (otd 2959) 27 3034
Marion County—
Texas, Shanafelt 13, sw ne ne 29-2n-2e (otd 3426) 73 4632
Freiderich 27, ne nw sw sw 29-2n-2e (otd 3400) 74 4670
McBride, Lee 18, sw nw ne se 29-2n-2e (otd 3412) 58 4625
Magnolia, Young 18, se ne sw ne 29-2n-2e (otd 3424) 128 4625
Shanafelt 36, nw ne se sw 29-2n-2e (otd 3440) 167 4625
Shanafelt 35, nw sw se 29-2n-2e (otd 3404) 49 4617
White County—
Cherry & Kidd, Calvin 2, nw se ne, 8-4s-14w (otd 2709) 78 2822
Pure, Potter 2, nw nw sw 9-4s-14w (otd 2705) 188 2835
Blackstock, Storms 7, sw se ne ne 23-6s-9e (otd 2265) 18 2327

GAS INPUT WELL

Fayette County—
Carter, Lancaster 10-4, se c nw ne 10-8n-3e 1601

Indiana

Gibson County—
Continental Oil, Kleiderer 3, nw se sw 26-3s-14w (pb 2585) 20 3539
Knox County—
Sam Yingling, Schneck 1, sec sw ne 10-1s-12w ..... * 2364
Pike County—
Southwestern Dev. Co., Doads 1, sec sw 19-1n-6w ..... ¶0.75 718
P. W. Harr et al, sw nw ne 26-2w-8w ..... * 1890
Porter County—
Felix Jadlonski, Ignazpluta 1, se sw nw sw 27-37n-5w ..... * 1247
Posey County—
Gulf Ref. Co., Scherer 1, c ne sw se 1-6s-13w ..... * 1174
Sullivan County—
Tior Dr. Co., Ridgway 1, c sw se 35-8n-10w ..... * 863
Vanderburg County—
Williams et al, Strueh Hrs 1, sw sw nw 6-7s-11w ..... * 1833

OLD WELL DEEPENED

K. B. Holland, Hale 3, sec ne ne 30-1n-7w (otd 1104) ..... * 1146

Kansas

Barton County—
Skelly, Esfeld 3, c s½ ne ne 30-16-11w 90 3322
Shell, Bitter "B" 14, nwc sw 5-16-13w 3000 3327
Schermerhorn-Winton, Merten 1, c e½ ne sw 11-19-15w ..... ¶8.6 3550
Gulf, Meyer 2, sw ne se se 13-20-11w 3000 3265
Alpine et al, Schartz 1, c n½ nw se 1-20-12w 30 3367
Continental, Echeufler 6, se ne nw 24-20-12w ..... * 3440
Butler County—
Bisagno Bros., Fee 2, sw se ne ne 35-26-5e 25 2752
Rex-Morris, Mathews 1, ne se nw 26-28-6e ..... * 2886
Cowley County—
Tulsa Oil Corp., et al, Miller 1, sw se ne 15-32-5e (pb 3105) 40 3112
Brewer, Miller 1, se nw sw 16-32-5e 173 3078
Ellis County—
Dickey, Stein 6, c w½ ne se 7-11-17w 3000 3408
Champlin, Hadley "D" 8, c n½ nw sw 17-11-17w 3000 3420
Cities Service, McCord "A" 8, se nw se 26-11-17w 3000 3561
Hall "G" 1, swc 2-12-17w ..... * 3780
Darby, Hadley "B" 8, c s½ sw nw 13-11-18w 3000 3349
Bridgeport, Froelich 2, c e½ nw se 4-13-16w 914 3249
Ellsworth County—
Beardmore, Talsky 7, c e½ sw ne 8-16-10w 480 3280
Continental et al, Janzen 4, c sw 22-17-8w 557 3267
Ploog "A" 7, sw nw ne sw 27-17-8w 3000 3224
Rolfs 9, c ne 28-17-8w 395 3229
Greenwood County—
Henderson, Schneider 5, nw sw sw 9-23-13e 40 1791
Shaffer et al, Schneider 21, sw ne nw nw 15-23-13e 15 1614
Molter et al, Ledgerwood 2, nwc sw 36-27-8e (pb 2755) 10 2762
Marion County—
Ring-Mac, Schick 3, nw sw nw 33-17-4e 177 2430
McPherson County—
Westgate-Greenland, Chindberg 2, c w½ nw se 18-18-1w ..... * 2870
Rice County—
Continental et al, Kimple 7, se sw nw 25-18-8w 3000 3219
Kimple 8, ne nw nw 25-18-8w .. 3000 3231
Warner "A" 3, se nw nw 36-18-8w 3000 3227
Carlock, Karber "B" 1, c s½ sw sw 6-19-10w ..... * 3404
Olson et al, Cox 1, c n½ se ne 9-20-9w 162 3245
Brunson, Specht 1, c s½ se nw 16-20-10w ..... * 3396
Russell County—
Continental, Rein "B" 3, c n½ se nw 27-14-13w 1359 2915
Cities Service, Graham 5, c s½ ne nw 28-14-13w 520 3159
Coralena, Phinney 8, c n½ se ne 30-14-13w 104 2981
Skelly, Ehrlich 4, c n½ sw sw 32-14-13w 54 2976
Helmerich & Payne, Holl 4, c nw 22-14-14w 414 3131
Darby, Strecker "B" 2, csl sw nw ne 25-14-14w 445 2986
Skelly, Rein 9, c n½ ne sw 25-14-14w 362 2989
Stanolind, Rein 6, csl se ne nw 25-14-14w 3000 2617
Irwin et al, Rein 1, se ne ne 8-15-13w 60 3330
Hissomm & Wolf, Michaelis 1, c n½ se se 27-15-14w ..... * 3385
Sedgwick County—
Deep Rock, Morely 1, nw ne sw 30-27-2e ..... * 3287
Stafford County—
Winkler-Koch, Equitable Life 4, c w½ sw ne 15-24-11w 3000 3808
Woodson County—
Aikman et al, Reed 2, sw se nw se 26-23-14e ..... * 1669
McCormick, Memmer 1, c w½ nw nw 23-25-15e ..... * 1451

Kentucky

Daviess County—
Andy Teller, Lebold 4 ..... 44 1304
H. C. Farmer, Nation 4 ..... 30 1356
Sargent et al, Westerfield 1 ..... 100 1040
A. V. Smith, Wilson 1 (pb 1200) .. * 1687
E. L. Newton et al, Miller 1 ..... * 2047
Hancock County—
W. J. Flescher, Quissenberry 4 .... * 350
W. E. Hupp, Bolling 1 ..... 6 409
Sands Pet. Co., Pulliam 1 ..... * 445
Henderson County—
A. V. Smith, Triplett 1 ..... 6 671
Butler 1 ..... * 1651
Hupp et al, Conway 1 ..... 30 1597
McLean County—
South Penn Oil, Kirkley 10 ..... 20 2041
Stewart & Snyder, Hansford 2 .... * 1762
Ohio County—
W. H. Parks, Schrieve 1 ..... * 274
Leeper Oil Co., Ford 8 ..... 30 743
Brenner et al, Bellamy 1 ..... * 718
R. R. Hart, Clark Hrs. 7 ..... * 371
Clark Hrs, 6 ..... 12 294
C. C. Quarles, Cheek 8 ..... * 350

OLD WELL DEEPENED

Webster County—
Ila Browning, Walker 1, (otd 1171) 30 1371

South Louisiana

Ascension Parish (Darrow Dome)—
Humble, Community 37 ..... * 4739
Calcasieu Parish (Edgerly)—
Gulf, Miller 1 ..... 25 8502
Cameron Parish (Black Bayou)—
Shell, Watkins, 46 ..... 154 5915
Cameron Parish (Cameron Meadow)—
Burton-Sutton, School Land 2-A.. 125 4772
Evangeline Parish (Pine Prairie)—
C & I Prod. Co., Evangeline Ld. & Min. 1 ..... 810 8236
Evangeline Parish (Ville Platte)—
Continental, Ed Tate-Lillie Tate No. 29 ..... 173 10,177
Iberia Parish (Bayou Pigeon)—
Plymouth, Jeanerette Lbr. Co. 1.. * 11,934
McHugh Hrs. 2 ..... * 8402
Iberia Parish (Jefferson Island)—
Texas Co., Jefferson Island Salt 7 * 8345
Iberville Parish (St. Gabriel)—
Geo. Echols, McDermott-Natalbany 1 ..... * 9234
La Fourche Parish (Golden Meadow)—
Bering Oil Co., Terrebonne 1..... 174 5488
Plaquemines Parish (Venice)—
Tide Water, Manhattan 14..... 187 7902
St. Martin Parish (Anse La Butte)—
Glassell, Anse La Butte Dev. 1.... * 5415
St. Martin Parish (Plumb Bob)—
Texas, St. Martin Ld. Co. 15..... * 9118
St. Martin Parish (West Lake Verret)—
Shell, Jeanerette Lbr. Co. 8..... 185 8616
St. Mary Parish (Charenton)—
St. Mary Oil Co., Hertel B-5..... 140 1169
Terrebonne Parish (Bay St. Elaine)—
Texas Co., State B-6 ..... 140 8012
Vermilion Parish (Gueydan)—
Union Sulphur, Baker 1..... 300 9848

North Louisiana

Caddo Parish (Pine Island)—
Sloan-Wells, Foche 1, 12-20n-16w. 10 1565
Texas Co., Herndon 6, 22-21n-15w. 64 1608
Tiger O&G, Crystal A-2, 24-21n-16w * 1707
Guy Kinney, Crystal 3, 24-21n-16w 5 1713
Weaver-Perry Oil Co., Pardue 6, 33-21n-15w 18 1570
Wilkinson et al, Ivans 1, 32-22n-15w * 1684
Caddo Parish (Greenwood)—
Delta Dr. Co., Thigpen-Herold A-2, 13-17n-16w ..... * 2618
La Salle Parish (Olla)—
H. L. Hunt, Goodpine 10, 18-10n-3e * 4001
Placid Oil Co., La. Cent. Lbr. Co. 85, 2-9n-2e 120 2286
La Salle Parish (Little Creek)—
Placid Oil Co., Tremont Lbr. Co. 3, 18-9n-3e ..... * 3620

Michigan

Allegan County—
Charles W. Cook, Hewitt 1, sw se nw 31-3n-13w ..... * 1560
William Clock, Thayer 1, se se se 17-1n-13w 30 1361
H. C. Wiliam, Kelly 1, sw ne sw 30-1n-13w ..... * 1376
Isabella County—
F. O. Wilkin, Herring 4, ne nw se 22-16n-4w 400 3742
Lenawee County—
Ralph LaBlanc, Fick 1, c s sw se 26-6s-5e ..... * 2802
Ottawa County—
Fisher-McCall Oil Co., Heyboer 1, se ne sw 1-6n-13w 20 1899
Roscommon County—
Sun, Watson 1, nw ne nw 26-24n-2w * 3033
Van Buren County—
California Dr. Co., Theisen 1, ne sw sw 13-4s-13w 15 1143

Mississippi

Yazoo County (Tinsley Dome)—
Union Prod. Co., Berry 1, 25-10n-2w 625 4981
Stevens 18, 12-10n-3w 360 4806
Henderson 2, 25-10n-2w 620 5057

Missouri

Holt County—
Brin & Nathan, Decker 1, c nw nw 1-61n-38w ..... * 2311
New Madrid—
Cordova-Union Oil Corp., Phillips 1, nwc 33-23n-14e ..... * 2503

Montana

Glacier County (Cut Bank)—
Glacier Prod. Co., Federal Land Bank 2, cse sw 30-34n-5w..... 25 2842
Santa Rita O. & G. Co., Jordan 3, cse ne 7-32n-5w 220 2960

Nebraska

Richardson County—
Ohio, Bucholtz 4, c sw nw 17-1n-16e * 2303
Trans-Continental, Hebenstait 1, c nw sw 8-2n-16e ..... * 2550
Bollen et al, Bankers Life 1, c sw sw 30-3n-16e 187 2521

New Mexico

Eddy County (Wildcat)—
Fulton Oil Co., Johnson 1, nwc se 22-19s-27e (pb 1645) 2 1849
J. A. Harris et al, Josey 1, sec sw 19-20s-23e ..... * 643
Eddy County—
Brewer Dr. Co., Williams 2, se nw nw 25-18s-26e 28 1049
J. H. Elder et al, Root 2, c sw nw 7-17s-30e 142 2726
Ployhar et al, State 1, nwc 3-18s-28e 40 2252
Skelly, Lynch 2-A, c sw nw 22-17s-31e (pb 3420) 64 3893
Lea County (Maljamar)—
Drilling & Explo. Co., Johns-Emperor 2-B, c nw sw 24-17s-32e. † 1045
Maljamar O&G Corp., Mitchell 12-A, c sw nw 19-17s-32e..... 40 3984

United States Well Completions—*Continued*

New York

Allegany County—

Company, Well and Location	Init. Prod. Bbls.	Depth
Ebenezer Oil Co., Herrick farm, Alma	5	1329
Mary M. Scott, Scott farm, Bolivar	15	1376
D. V. McCarthy, Goodrich farm, Bolivar	5	1278
Bradley Prod. Corp, Duke farm, Alma	4	1439
Brown & McEnroe, Barnes farm, Alma	6	1239
Bradley Prod. Corp., Fitz-Carrol farm, Bolivar	5	1376
L. H. Thornton et al, Fassett farm, Willing	8	1321
Sloan & Zook, McDermitt farm, Bolivar	5	1383
Gray Oil Co., Gray farm, Genesee	5	1422
Forest Oil Co., Ackerman farm, Wirt	8	1385
Bradley Prod. Corp., Coats farm, Wirt	5	1345

WATER INTAKE WELLS

Allegany County—

Franchot Oil Co., Murphy farm, Bolivar	...	1442
Messer Oil Corp., Miles farm, Bolivar	...	1419
Otsquago Corp., Pike farm, Alma	...	1462
L. H. Thornton et al, Fassett farm, Willing	...	1351

Ohio

Athens County—

Preston Oil, Sunday Creek Coal 1747	*	3859

Coshocton County—

Wm. Peiffer, McAllister 1	*	910

Cuyahoga County—

Obermiller Bros., Franz 1	¶5.0	2725

Guernsey County—

Frank Stranges, Devold 3	¶0.12	1325

Licking County—

Guy T. Shrider et al, Davis 2	10	711
Ohio Fuel Gas, Mahaffey 2	¶0.34	2608
Geo. Lacknett, Hendricks 1	¶0.3	2655
Dowler Oil Co., Palmer 1	¶0.2	2382
Allen Willey, Hoover 2	*	2626
James McCloy, Cain 1	*	2325

Lorain County—

Paul Baldwin, Buell 1	¶0.02	257

Medina County—

Marine Tr. Co., Packard 41-A	5	400
Wertz 2-A	2	364
Preston Oil Co., Grigsby 7-H	5	507
Whitman 1	*	556
Clapp 5-XGO	*	500

Meigs County—

Ebersbach et al, Roush 1	¶0.2	3334
Fleming et al, Heath 2	¶0.03	155

Monroe County—

Bach et al, Steigner Hrs. 3	¶0.05	1785
Pryor Oil Co., Pryor 1	*	1635

Morgan County—

Swingle et al, Creighton 1	*	1010

Muskingum County—

Atha Oil Co., Ellerman 1	35	3841
Glen Sturm, McLaughlin 1	¶6.5	4153

Noble County—

Smithberger, Cox 1	¶1.1	1000
H. G. Clymer, Shaffer 1	¶0.06	1559
Chaseville Co., Graham 1	*	1539

Vinton County—

James Henry, Fee 1	*	1582

Washington County—

E. H. Schaffer et al, Hesson 1	3	1508
Rockey Oil Co., Smith 1	2	1510
J. Campbell, Jenkins 2	¶0.03	1618

Wayne County—

Peak & Nohe, Goudy 1	*	701

OLD WELL DEEPENED

Washington County—

Campbell et al, Liebrand (otd 1081)	¶0.61	1446

INJECTION WELLS

Medina County—

Marine Tr. Co., Packard 46-0	...	428
Packard 47-0	...	445
Packard 53-0	...	418
Wertz 2-0	...	409
Preston Oil Co., Grigsby 6-GO	...	582

Oklahoma

Bryan County—

Pure, Thompson (107) 1, ne ne 33-5s-7e	357	5070

Carter County—

Kyle, Daugherty 2, sw se sw sw 17-4s-2w	463	2128
W. H. Smith, Ward 7, ne sw se se 18-4s-2w	30	2265
Ward 8, sec 18-4s-2w	500	2089
Ward 11, nec 19-4s-2w	500	2058
Ward 12, c e½ ne ne 19-4s-2w	500	2077
Ward 13, ne se ne ne 19-4s-2w	500	2109
Ward 14, se se ne ne 19-4s-2w	720	2119
Ward 16, sw se ne ne 19-4s-2w	960	2265
Batson & Sanders, Wllams 8, ne sw se ne 20-4s-2w	92	2173
Dixon & Lausen, Woodsworth 4, nw se nw nw 20-4s-2w	168	1967
Gibson & Jennings, Herrell 3, sw sw nw nw 20-4s-2w	859	2251
Neustadt, Choate (20) 5, se nwc 20-4s-2w	265	1968
O'Conner et al, Horton 3, sw nw se sw 21-4s-2w	82	2382

Creek County—

Shell, Orr "A" 2-A, nwc 32-15n-7e.	136	4066

Grady County—

Stanolind, Sanford 1, c sw sw 23-5n-8w	¶190.0	4355

Hughes County—

Phillips, Douglas 1, nw ne ne 8-5n-10e	41	4474

Jackson County—

Aloma, Cole 2, se ne se 5-1n-20w	*	1719
Burnham, Hensley 10, ne se nw 10-1n-20w	250	1574
Gulf, Enos 3, se ne ne 16-1n-20w (pb 1403)	¶18.9	1667

Love County—

Martin, Porter 1, sw ne se 19-6s-3w	*	1623

Okfuskee County—

Sunray, Spillman 1, sw nw nw 4-10n-9e	*	3485
Hembree, Walker 1, se se ne se 13-10n-10e		*2243
Klingensmith, Alta 3, c nw nw 13-10n-11e	*	2084
Phillips, McMahon 2, se ne nw 11-11n-10e (pb 3230)	69	3238
Devonian, Phillips "A" 1, sw nw sw 26-12n-8e	158	3699
Phillips "B" 1, sw se sw 26-12n-8e	150	3670
Keener, Halley 1, se nw se 36-12n-9e	65	3133

Oklahoma County—

Phillips, Delton 1, sw ne nw 34-12n-3w	270	6576

Okmulgee County—

Walker, Moore 7, c se sw 1-13n-13e	5	1300
Pine, Martin 13, nw ne se sw 18-13n-14e	*	510
Wells et al, Douglas 1, nec se 17-14n-11e	*	3034
Rebold, Haynes 2, se sw sw 25-14n-12e	12	1663
Viersen, Tilt 1, se se 4-15n-12e	*	2659

Osage County—

Magnolia, 3, nw se nw 14-26n-6e	88	2895
Stanolind, 11, se nw se 18-27n-8e	190	2445

Pawnee County—

Johnson O. & R., Mann 13, nw ne sw 23-20n-7e	¶3.1	2623
Malernee, Lucas 1, nw se nw 28-21n-8e	*	3091

Payne County—

Wood, Daniels 1, sec 15-19n-3e	*	4405

Pottawatomie County—

Grisso, Royster 1, sw nw nw 33-6n-3e	¶3.5	3753
J. F. Smith, Beal 1, sw ne sw 5-7n-4e	*	4475
Vance 2, swc 5-7n-4e	*	4031
Zephyr, Harrison 1, sw se sw 5-7n-4e	*	3965
J. F. Smith, Brown 2, sw se ne 6-7n-4e	1440	3993

Seminole County—

Newsom et al, Smith "B" 2, ne se ne 20-7n-6e	110	2360
Winona, Chisholm 1, ne sw nw 19-7n-8e	105	1494
Delaney et al, Brook 1-A, nw sw nw 25-8n-6e	*	4200
Stanolind, Grosso "A" 2, se nw sw 15-9n-6e	35	2921
Miller, Parsons 1, swc nw 29-11n-6e	*	4811

Tulsa County—

A. W. Swift, McKee 1, sw se sw 13-19n-10e	12	1810
R. H. Grove, Dunn 2, sec 36-18n-12e	8	1347

OLD WELLS DEEPENED

Jackson County—

Aloma, Robertson 2, se ne sw 15-1n-20w (otd 1528)	32	1556

Okfuskee County—

Summit, Steil 7, se se ne sw 18-10n 11e (otd 2162)	90	2279
Phillips, Replogle 1, swc se 2-11n-10e (otd 3191) (pb 3196)	36	3200

Pottawatomie County—

I. T. I. O., Lucas 2, ne nw nw 2-6n-4e (otd 4258)	23	4368

Pawnee County—

Major, Moore 2, sw se sw ne 12-20n-7e (otd 2464)	30	2624

Pennsylvania

BRADFORD DISTRICT

C. A. Duke Est., D. C. & B.	5	....
Pure Penn Oil, Kinley Oil Co.	7	....
Forest Oil Corp.	1	....
Forest Pet. Corp., 2 wells	2	....
Niagara Oil Corp., 6 wells	6	....
Bradford Tr. Co., 18 wells	18	....

WATER INTAKE WELLS

Messer Oil Corp., Loop	...	....
Forest Oil Corp., 2 wells	...	....
Forest Pet. Corp., 2 wells	...	....
Niagara Oil Corp., 3 wells	...	....
D. Y. M. Corp. No. 3, Bing 466	...	....
Grant & Mohan No. 3, Bing 486-7	...	....

NEW YORK-PENN GAS FIELD

Empire G. & Fuel Co., Crandall	¶	....
Belmont Quad. Dr. Corp., Lewis	¶	....

MIDDLE DISTRICT

Fryburg Motor Co., Davis	2	....
I Dana Kahle, Berlin	1½	....
Duke & Buck, Duke	2	....

BUTLER-ARMSTRONG DISTRICT

Heck, Gallagher et al, Brewer Hrs.	*	....

SOUTHWEST DISTRICT

Allegheny County—

Purdy Bros., Park 4	¶0.05	727

Armstrong County—

Humphries, Stone & McCall, McAlfoose 1	¶0.04	3533

Greene County—

Cleveland-Cameron O. & G., Morris 1	¶0.09	3463
Brummage et al Whooley 1	¶0.07	3008

Indiana County—

T. W. Phillips, Weiss 1	*	3154

Washington County—

Finleyville O. & G., Link 74-F	¶0.03	3967

Westmoreland County—

Peoples Nat. Gas, Wise 1	¶0.07	3752

Texas Panhandle

Carson County—

Skelly, Schafer 118	318	3109
Texoma Nat. Gas. Co., Schafer 9-S	¶24.7	2920

Gray County—

Danciger O&R, Williams 4	453	2785
Southern Pet. Explo. Co., Vaughn 12	75	3229

Hutchinson County—

Benonine Oil Co., Starnes 10	272	3160
Cree-Hoover-Dye, Harvey Sisters 11	120	3044
J. E. Crosbie, Inc., Cockrell 4	54	2884
Phillips, Kay 4	217	3205
Shell, Harvey Sisters 18	205	3068
Harvey Sisters 19	357	3078

North Texas

Archer County (Griffin-Kadane)—

Jack E. Kadane, Tr. Griffin 1-B	760	4397

Archer County (Hull-Silk)—

L. T. Burns et al, McCrory-Wilson 2	508	3903
Sinclair Prairie, Jones 2	145	3807

Archer County—

Henry Grace et al, Wilson 1	98	1538
Rathke Oil Co., Meade 6	*	1480
United Prod. Co., Beardon 2	*	1125
Beardon 3	*	1125

Archer County (Wildcats)—

Fresno Oil Co., Hammond 1	*	1408
Young-Woody Dr. Co., Harmel 1.	*	1551

Clay County (Wildcat)—

Shell, Coleman 1-A (pb to 6283 ft)	1104	6837

Clay County (Antelope)—

Shell, Coburn 9	1794	3254
Mullens 2	588	3239

Clay County—

Duncan & Arnhold, Duncan 21	35	1242
Geo. Golden et al, Enyart 1	*	291
McElreath & Suggett, Turner 1-A.	*	1245
Stayton Oil Co., McGregor 2	25	1147

Cooke County—

High Point Oil Co., Fette 2	70	1123
Seitz-Comegys & Seitz, Poteet 12	30	1445
Whitfield-Pearson & Grimes, Sicking 12	276	1298

Foard County (Wildcat)—

Texas Co., Harabal-Margaret 1	*	7064

Jack County—

Panhandle Ref. Co., Daugherty-Leffel 7 (pb 2945)	20	3200

Jack County (Wildcat)—

C. H. Peterson et al, Hoefle 1	*	525

Montague County (Rogers & Rogers)—

Carnation Oil Co., Molsbee 1 (pb 4590)	192	5324

Montague County—

Claymount Oil Co., Bouldin-Crow 8	10	818
Pure, Keck 14-A	13	828

Wichita County (K-M-A Ellenberger)—

Consolidated Oil, Ferguson 25	751	4294

Wichita County (K-M-A) —

Buffalo Oil, Ferguson 22	800	3848

Wichita County—

Akin-Dimock-Costley, Dodson 4-A.	24	1326
Dodson 5-A	60	1321
Dodson 1-B	*	1350
Waits 2	25	1328
F. A. Dickinson et al Fee 18	5	824
Geo. Proctor et al, Foster-Allen 55-A	*	1385
Wolfe & Huli, Daume 5	10	698

Wilbarger County (Fargo)—

Humble, McCaleb 1	424	4544

Wilbarger County (Harrold)—

Chas. H. Kadane-J. N. Fidel, Cochran 1 (new pay)	175	3281
Schlaffke 1 (new pay)	122	3182

Young County—

Ard & Benson, Rogers 6-A	*	944
L. T. Burns et al, Rogers 11	85	898
Horwitz & Oldom, Graham 21	24	591
E. W. Hunt et al, Gass 12	5	1230
P. B. Worthington et al, Routon 3	*	830

Young County (Wildcats)—

L. T. Burns et al, Larimore 1-A	1795	4927
J. E. McDonald et al, Marshall 1	*	650

United States Well Completions—*Continued*

East Texas

Kilgore Area—
Sam Gross & H. Shulman, Walker-Sun 5 (40-ac) ..... • 3614
Houston Oil Co., Hughey 9.....1500 3536
J. J. Jenkins et al, King 4-B.... 900 3580
C. C. Julian O. & Roy., England 11 (32-ac) 960 3569
Jas. E. Kemp et al, King 13 (blk 138) 600 3568
King 14 (blk 138) 600 3568
Potter Bros. Prod. Co., Crane 4 (blk 139) 1000 3568
Shell, Watson 96 (385.2-ac).....4500 3680

Longview Area—
General Am. Oil Co., W. L. Kistler, Adams 33 (102.65-ac).....7000 3624
L. & G. Oil Co., Lee 2 (36.82-ac).1200 3578
Mudge Oil Co., Shelton 2 (8.8-ac)..1500 3737
Tide Water, Anderson 3 .....1500 3621

Anderson County (Cayuga)—
Ce-Beth Oil Co., Royal-Cone 3.... 8 4032

Franklin County (Talco)—
Magnolia, Rutherford 5 ..... 786 4270

Houston County (Grapeland)—
Geier Bros., Inc.-F. B. Jackson, Dailey 1 .....110.0 5966

Titus County (Talco)—
Humble, Temples 4..... 315 4324

Upshur County (Wildcat)—
Sun, Henderson-Republic 1 ..... • 7923

Wood County (Hawkins)—
Bracken Oil Co., Goodson 1 (3-ac) 476 4820
LaForce 1, Lots 1 & 2..... 441 4808
Cable Tool Dr. Co., Kay-Atkins 1.. 442 4822
Humble, Atkins 1 (341.44-ac)..... 212 4803
Faulk 1 (163.38-ac) 395 4808
Jackson 1-A (54.93-ac) 439 4807
J. S. King et al, Fee 1 (½-ac).... 488 4807
Red Iron Dr. Co.-Robbins & Silvey, Allen 1 ..... 463 4800
O. F. Wencker et al, Surratt 1 (30-ac) 398 4870

Harrison County (Waskom)—
Arkansas-Louisiana Gas, Howell 1, Simpson Holloway sur .....¶33.5 6310

Shelby County (Wildcat)—
Coupar Oil Co., Jones 1, John Latham sur ..... • 3226

Shelby County (Joaquin)—
Grady Vaughn, Pickering Lbr. Co. 1, H. L. Brooks sur .....¶4.0 6336

West Texas

Andrews County (North Cowden)—
Atlantic Ref.-Sun, Holt 3-B..... 306 4495

Cochran County (Slaughter)—
Honolulu Oil Corp., Igoe-Smith 3, Lab 5 ..... 655 5001
Mid-Continent Pet., Mallet 3-A.... 638 5058

Crane County (Gulf-Waddell)—
Gulf, Waddell 40.....4536 3509

Crane County (Sand Hills)—
Humble, Tubb 52 .....1355 4420

Crockett County (Wildcat)—
Geo. T. Morris et al, Brock-Hoover 1 ..... • 1503

Ector County (Foster)—
Atlantic Ref. Co., Johnson 1-L.... 193 4230
Kewanee Oil Co., Foster 2 .....1298 4130
Schermerhorn Oil Corp., Johnson 13-B 606 4182
Sinclair Prairie, Palmer 1 (out-post) 2808 4205
Stanolind, Johnson 21-A 222 4220

Ector County (Goldsmith)—
Gulf, Goldsmith 347.....1265 4240
Goldsmith 350 ..... 517 4249

Ector County (Jordan)—
Snowden & McSweeney Co., Bond-Harrison 1 ..... • 3685

Ector County (North Cowden)—
Carl B. King Dr. Co., Holt-Landreth 3-B 579 4385
Stanolind-M. J. Delaney, Smith-T. P. Coal 2-B 64 4400

Gaines County (Cedar Lake)—
Stanolind, Bremont 2 (pb 4844)... 640 4920

Gaines County (Seminole)—
Amerada, Hahn 4 ..... 810 5330
Magnolia & Atlantic, H. & J. 13-195 ..... 324 5270
H. & J. 10-217 ..... 226 5339

Gaines County (Wasson)—
Continental Oil, Moore 8-45..... 508 5049
Wasson 8-49 ..... 933 5066
Continental-Amon Carter, Langdon 10-44 ..... 668 5051

Hockley County (Slaughter)—
Devonian Oil Co., Hudgens 3.....1690 5029
Sid Richardson et al, Slaughter 12, Lab 56 .....1402 4992
Slaughter 7-B, Lab 43..... 607 4940
Slaughter 8-B, Lab 43.....1319 4996
San Andres Prod. Co., Caddell 1-A 328 4996
Stanolind, Slaughter 18-B.....1345 5070
Whittington Bros et al, Barry 1..1231 5005

Irion County—
U. Hampton et al, Nutt 1..... • 600

Pecos County (Abell)—
Magnolia, Crockett 1 (458-ac)....1210 5335

Pecos County (Taylor-Link)—
Dave Breeding et al, University-Humble 5-J 1296 1752
Earl C. Frates et al, University-Humble 1 ..... • 1687

Pecos County (White-Baker)—
Cardinal Oil Co., White-Baker 1-H † 1781

Scurry County (Sharon)—
D. & R. Oil Co., Burney 7..... 169 2466
R.-Y. Oil Co., Trevy 1..... 165 2405

Upton County (Gulf-McElroy)—
Gulf, Crier-McElroy 50.....5487 2865

Upton County (McCamey)—
T. P. Coal & Oil Co., Sherk 1-E.. 103 2395

Ward County—
Gulf, O'Brien 167 .....1038 2795

Winkler County (Gulf-O'Brien)—
Gulf, O'Brien 166 ..... 590 2777

Winkler County (Keystone)—
J. R. Sharp et al, Jenkins-Gulf 3.. 215 3394

Yoakum County (Waples-Platter)—
Geo. P. Livermore, Ownby-Shell 1 778 5348

Yoakum County (Wasson)—
Aloco Oil Co., Walker-Texaco 8... 419 5269
Basin States Oil Co., Jordan-Honolulu 8 .....1137 5275
Denver Prod. & Ref. Co., Whittenburg 15-A 1026 5165
Oil Dev. Co., Williard 16-763.....1164 5270
T. P. Coal & Oil Co., Hall 7..... 934 5200

West Central Texas

Brown County—
Hagan-Stewart Dr. Co., Perry 4.. • 936

Callahan County (Wildcat)—
C. J. Kleiner & Acers, Snyder 1.. • 1002

Callahan County—
Garvin & Stoker, Williams 1..... • 608
Ungren-Frazier et al, Hardy 1.... • 1292

Coleman County—
Harry N. Neeb et al, Davidson 1.. • 987

Eastland County—
Imperial Oil Co., Jackson 1..... 250 2575

Jones County—
Kirk Johnson - Ungren - Frazier, Sayles 8 ..... 106 1933
Pet. Producers Co., McKeown 6.... 262 1904
Sandy Ridge Oil Corp., Brock 3.. 116 2025

Jones County (Wildcat)—
Danciger O&R, Foster 1..... • 2976

McCulloch County (Wildcat)—
A. K. McCord et al, Nelson 1.... • 331

Shackelford County (Wildcats)—
Frank Cann & Wagley, Burton 1.. • 650
Cecil Young et al, Simpson 3.... • 487

Shackelford County—
R. H. Roak et al, Snyder 2..... • 746
T. S. Stanfield et al, Hendrick 1.. • 921
E. F. Yates et al, Chilton 1..... • 808

Southwest Texas

CORPUS CHRISTI DISTRICT

Jackson County (Lolita)—
Skelly, Ward 5 ..... 500 5297

Jackson County (West Ranch)—
Magnolia, Bennett-Fee 9 ..... 550 5756
West 135-A 750 5755
West 141-A 40 5774
West 144-A 475 5770

Live Oak County (White Creek)—
P. H. Korges, Laughridge 3..... 46 1560

Live Oak County (Wildcat)—
J. H. Durbin et al, Davidson 1.... • 1085

Nueces County (Agua Dulce)—
Renwar Oil Corp., Ingram 2..... 500 6453
Union Prod. Co., Driscoll 2-A .....¶45.0 & 150 5695
Shield Oil Co., Harvey 1..... 500 6452

Nueces County (Bentonville-King)—
Southern Min. Corp., Walker 8.... 350 5645

Nueces County (Riverside wildcat)—
Stanolind, Thompson et al 2, new sand and extends fld 1 mi n .....¶15.0 & 75 7750

Nueces County (S. Clara Driscoll)—
Texas, Taylor 3 ..... 275 5495

Nueces County (Shield)—
Shield Oil Co., Lewis 3-B..... 550 6620

Nueces County (Stratton)—
John F. Camp, Wardner 1..¶50.0 & 200 6588
Seaboard Oil Co. of Del., Kansas City 1 ..... • 7224

San Patricio County (Midway)—
Stanolind, Ivey 2 ..... 53 5253

Victoria County (Coletto Creek)—
Averill & Cox, Terrel 3 ..... 30 2854
Terrell 4 ..... • 2710
North Millican et al, Kastner et al 3 ..... 250 2890
Albert Plummer, Terrell 3-B..... 175 2850

Victoria County (Cologne)—
Houston Oil of Texas, Schubert 2.¶20.0 2895

Victoria County (Heyser)—
Gulf, Traylor 53-B 650 5485

LAREDO DISTRICT

Duval County (Casa Blanca)—
Transwestern Oil Co., D. C. R. C. 30 ..... • 1159

Duval County (Wildcat)—
J. L. Collins & Co., Adami 3..... • 1510

Jim Hogg County (Colorado)—
Humble, Atwood 31 ..... • 3159

Jim Hogg County (Wildcat)—
Sun, Montalvo 1 ..... • 4609

Starr County (Samfordyce)—
Phillips, Saenz 3 ..... 450 4182
H. J. Porter, Flores 1..... 350 4112

Starr County (Wildcat)—
Thompson et al, Bass & Bass 1.. • 3520

Webb County (Killam)—
O. W. Killam, Garcia 12..... 175 2050

Zapata County (Lopena)—
Venture Pet. Corp., Ramirez et al 1-B .....¶20.0 3150

OLD WELL DEEPENED

Zapata County (Lopeno)—
American Texas Oil Co., Ramirez 1 (otd 2246) .....¶20.0 2587

SAN ANTONIO DISTICT

Bastrop County (Wildcat)—
Marts & Beavens, Inc., Wildcat 1-A, opens Elgin fld 100 3350

Bexar County (Gas Ridge)—
H. J. Bussa, Barker 11-B 4 425
Southwest Dr. Co., Covell et al 18 3 440

Bexar County (Wildcat)—
A. H. Uechert, Hoffreuther 1..... • 1190

Guadalupe County (Elm Creek)—
Jack E. West et al, Hartfield 4.. 4 820

Medina County (Wildcat)—
B. C. Mitchell, Rinehart 1..... • 510

Texas Gulf Coast

Brazoria County (Hastings)—
Stanolind, Curkett C-40 ..... 596 6106

Brazoria County (Old Ocean)—
Harrison & Abercrombie, Wilson 3 ..... 684 10,241

Brazoria County (West Columbia)—
Hogg, Hogg A-7 ..... 175 5325

Burleson County—
Haven Oil Co., Lewis 1 ..... • 6520

Chambers County (Anahuac)—
Humble, Johnson 17 ..... 179 6970

Colorado County (Sheridan)—
Shell, Plow 3 ..... 145 10,251

Fort Bend County—
John Mayo & Hummel, Armstrong 1 ..... • 6535

Galveston County (Dickinson)—
Pure, Levin 3 ..... 265 8119

Galveston County (League City)—
Phillips, Ross et al 1 ..... 243 9300

Harris County (Humble)—
Sessions, L. O. & R. Co. 1..... 60 1018

Jefferson County (Lovell Lake)—
Humble, Steinhagen 7-B 121 7798

Liberty County (Martha)—
Stanolind, Seaberg 5-C 142 8633

Waller County—
Kirby & Mayo, Donigan 1 ..... • 6398

Wharton County (Boling)—
Geo. Floyd, Floyd Est. 14..... 10 364
Floyd Est. 15 ..... 12 508

West Virginia

Calhoun County—
M. F. Crawley Gas Corp., Sommers 2 .....¶0.15 2600

Kanawha County—
West Virginia Gas, Burdette 2....¶4.29 5028

Marshall County—
Guy B. & H. G. Patterson, Burley 2 .....¶0.03 710

Pleasants County—
E. C. Hartman, Hammett Hrs. 2. 1 440
Hammett Hrs. 3 ..... 3 357

Ritchie County—
F. R. Morrison, Douglas 1 ..... 2 2020
Reno Oil Co., Hill 6 ..... 1 2192
Morris Farm O. & G., Morris 1....¶0.27 2100
F. S. Deem, Killingsworth 1 .....¶0.02 1990
W. H. & Roscoe Baker, Kester 5.. • 535

Tyler County—
George Egan, Myers .....¶1.7 1939

Wayne County—
United Carbon, Sansom 1 .....¶0.23 2862
W. Va. Gas Corp., Spurlock 2....¶0.16 3228
Ceredo O. & Nat. G., McCoy 1....¶0.08 2624

OLD WELLS DEEPENED

Lincoln County—
Vernon Gas, Adkins 2 (otd 2417).¶0.34 3780
Pauley & Pridemore, Adkins 1 (otd 2319) .....¶0.09 3412

Wyoming

OLD WELLS DEEPENED

Park County (Frannie Dome)—
Stanolind, Rosenburg 6, nw nw nw 25-58n-98w (otd 2747) 100 2820

Niobrara County (Lance Creek)—
Continental, Rohlff 6, csw sw 32-36n-65w (otd 3819) 375 5446
Ohio Oil, Converse Sheep Co. 7, nw se 32-36n-65w (otd 3833) 1200 5385

WILDCAT REPORT
New Starts and Completions

ARKANSAS
FIRST REPORT

Jefferson County—Patterson & Patterson's Stratton 1, sec 35-6-9, rig.

COMPLETION

Clark County—Christmas, Coker & Grieves' Sparkman 1, ne ne 7-11-20, abnd td 587 ft.

CALIFORNIA
FIRST REPORTS

Fresno County—D. M. Gay's No. 1, sec 3-11-21, rig, Friant area.
Kern County—Superior's KCL 13; sec 18-29-25, lcn, West Greeley area.
Los Angeles County—Roy W. Young, Inc.'s Walker 1, sec 11-4-16, lcn, Castaic area. St. Anthony Oil Corp.'s LaSalle 1; sec 10-3-16, grading, Newhall area. Newton Dev. Co.'s Palos Verdes 1, sec 13-5-15, dr, Palos Verdes area. Wood-Callahan Oil Corp.'s Dominguez Est. 1, sec 5-4-14, rig, Redondo area.

KANSAS
FIRST REPORTS

Barton County—Helmerich & Payne & Phillips Pet. Co.'s Reidl 1, c e½ ne ne 10-17-14w, dr. R. W. Rine Dr. Co. et al's Hart 1, c w½ nw nw 9-20-13w, dr.
Cowley County—Shell Oil Co.'s Hall 1, nec 36-32-3e, lcn.
Marion County—Holl et al's Faulkerson 1, c w½ nw nw 2-20-4e, mim.
Saline County—Stanolind's Karber 1, c n½ sw se 5-16-1w, dr.
Stafford County—Zephyr Dr. Co. et al's Shotton 1, c w½ nw se 28-22-13w, dr.

COMPLETIONS

Barton County—Vernon O. & G. Co. et al's Popp 1, ne se nw 15-16-14w, 1⅝-mi sw Trapp pool, Anhydrite 867 ft, Ft. Riley 1845 ft, Neva 2190 ft, Topeka 2820 ft, Lansing 3125 ft, Sooy 3344 ft, Arbuckle 3370 ft, hfw 3404 ft, abnd 3420 ft.
Ellsworth County—Phillips Pet. Co.'s Rolfs 1, c s½ se nw 10-17-9w, 1½ mi nw Lorraine pool, Anhydrite 474 ft, Lansing 2935 ft, Viola 3320 ft, Simpson 3361 ft, Arbuckle 3426 ft, abnd 3442 ft.
Saline County—John Allison & Rocket Dr. Co.'s King 1, c s½ sw sw 29-15-1w, 9 mi n Roxbury pool, Mississippi Chat 2672 ft, hfw 2720 ft, abnd 2722 ft.

SOUTH LOUISIANA
FIRST REPORT

Beauregard Parish—Humble's Edgewood Ld. & Log. Co. 1-B, Abbie Joe area, sec 25-6s-10w, rig.

COMPLETIONS

Evangeline Parish—C & I Prod. Co. et al's Evangeline Ld. & Min. Co. 1, e flank Pine Prairie dome, sec 37-3s-1w, Yegua sand 8189-8236 ft, perf 8226½-33½ ft, 810 bbls ¼-in ch, tp 1425, cp 1460, 40.5-gr, gas/oil ratio 890/1, comp 4-20-41.

NORTH LOUISIANA
FIRST REPORTS

Catahoula Parish—Louark & Phillips' Tensas Delta Lbr. Co. B-1, sw se nw 15-5n-5e, rig.
La Salle Parish—Herschell R. Scivally's Delta 1, ne 12-6n-4e, rig.
Natchitoches Parish—E. R. Demetrio's Winn 1, c se nw 25-10n-10w, mat.
Sabine Parish—K. E. Merren's Mills 1, sec 28-3n-12w, mat.

MICHIGAN
FIRST REPORTS

Allegan County—Rex O. & G. Co.'s Pollitt 1, sw se sw 6-2n-11w, dr.
Gratiot County—Belvidere Oil Co.'s Freeman 1, ne sw se 22-10n-3w, dr.
Iosco County—E. A. Robert, Spencer 1, ne ne se 15-23n-5e, lcn.
Kent County—Southwest Dev. Co.'s Gould 1, ne sw ne 20-5n-12w, dr.
Mecosta County—Freeman Oil Co.'s Reynolds 1, c n nw sw 24-13n-7w, dr.

COMPLETIONS

Allegan County—Charles W. Cook's Hewitt 1, sw se nw, 31-3n-13w, Traverse 1501 ft, abnd 1560 ft.
Roscommon County—Sun's Watson 1, nw ne nw 26-24n-2w, Dundee 2900 ft, abnd 3033 ft.

NEBRASKA
COMPLETION

Nemaha County—Phillips Pet Co.'s Neil 1, c sw ne 24-4n-14e, 6 mi se Auburn, Topeka 720 ft, Lansing 1060 ft, base Kansas City 1375 ft, Cherokee 1540 ft, Mississippi 2245 ft, abnd 2931 ft.

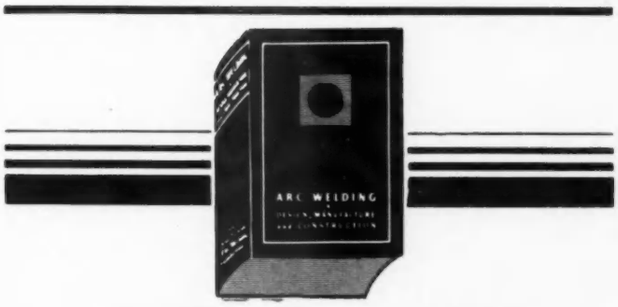
NEW MEXICO
Eddy County—Fulton Oil Co.'s Johnson 1, nwc se 22-19s-27e, elev 3480 ft, new pool, oil pay 1572-92 ft, pb from 1849 to 1645 ft, shot 230 qts nitro 1572-1645 ft, 1000 gals acid, pumped 8 bbls fluid daily, 25 percent oil. J. A. Harris et al's Josey 1, sec sw 19-20s-23e, elev 4282 ft, abnd 643 ft.

OKLAHOMA
FIRST REPORTS

Hughes County—Mid-Continent Pet. Corp.'s Felix 1, se sw sw 11-9n-9e, mirt. Mid-West Oil Co. et al's Hill 1-B, swc nw 13-9n-9e, lcn.
Okfuskee County—Sunray Oil Co.'s Brooks 1, nec nw 2-11n-10e, dr.
Payne County—Anderson-Prichard et al's McGuire 1, sec nw 20-18n-1e, rur.

COMPLETIONS

Comanche County—Bruce Ruynon et al's Whitehead 1, c e½ w½ ne, 3-1s-13w, 2 mi n Hilliday, water 336-42 ft, Granite Wash 342 ft, abnd 352 ft.
Cotton County—South Port Oil Co.'s Harris 1, c nw ne 26-2s-13w, 11 mi w Walters pool, water sd 1020-30 ft, Granite Wash 2290 ft, abnd 2296 ft.
Jefferson County—Jack Johnson et al's



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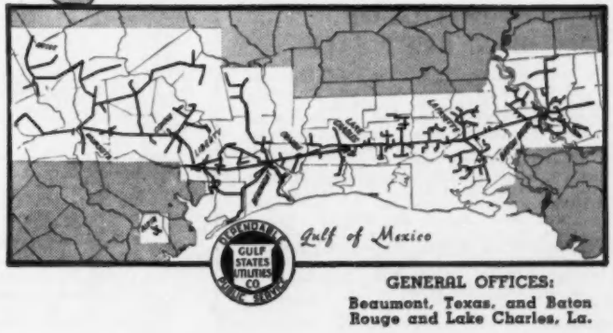

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Bound 2, nec sw 13-6s-6w, 2½ mi n Spring pool, dry sd 1558-80 ft, bkn dry sdy ll 1842-1900 ft, sdy shale 1900-60 ft, abnd 1960 ft.

Logan County—Kerlyn & Co.'s Waring 1, sw ne sw 33-19n-4w, 1 mi se Lovell pool, Lansing 3950 ft, Tonkawa sd 4031-4103 ft, Perry Gas sd 4279-92 ft, abnd 5201 ft.

Osage County—Superior Oil Co.'s Osage 2-A, se nw se sw 23-22n-8e, se Hominy pool, sd 447-77 ft, abnd 480 ft.

Seminole County—P. J. McIntyre et al's Brown 1, sw se ne 14-9n-7e, between Bethel and East Seminole pools, new disc, sample tops, Calvin zone 1790-2120 ft, Senors sd 2400-20 ft, Earlsboro zone 2710-2820 ft, Booch 3265-90 ft, Wapanucka 3447 ft, Cromwell zone 3451-3570 ft, Mayes 3910 ft, Woodford 4010 ft, Misener 4047-50 ft, Hunton 4050 ft, Sylvan 4165 ft, Viola 4256 ft, Wilcox 4333 ft, td 4337 ft, pb 3843 ft, perf 29 holes 3240-71 ft, perf one hole 3443, 3445, 3447, 3449, 3451, 8 holes 3450-51 ft, flow 162 bbls oil and 240 bbls water ⅝-in ch on tbg, packer set 3220 ft on tbg, 1,140,000 ft, gas.

TENNESSEE

FIRST REPORT

Shelby County—Lion O. R. Co.'s Bateman 1, 2-1/5 mi se Lucy and 12 mi ne Memphis (unsectionized), sp on 4500-ft test, Delta Dr. Co., cont.

SOUTHWEST TEXAS

FIRST REPORTS

Bastrop County—Marts & Beaven, Inc.'s Cheney Est 1, Glasscock sur, 4 mi e Elgin, mo.

Bee County—Crown Cent. Pet. Corp.'s Welder 1, J. M. Planes sur, 5.6 mi e Beeville, lcn for 5000-ft test.

Hidalgo County—W. R. Davis, Inc.'s Arizona & Texas Citrus Co. 1, Lot 1, Blk 8, Mc-Collum subd, 1 mi e McAllen, sp for 8500-ft test, Falcon Seaboard Dr. Co., cont.

Jackson County—Pure's Cravens 1, W. Menefee sur, ½-mi sw W. Ganado, lcn for 6600-ft test.

Jim Hogg County—W. G. French's Vela Pena 1, blk 4, White subd, sh 3, El Peyote gr, 4 mi nw Randado, dr 1425 ft on 3200-ft test.

Jim Hogg County—Gregg E. Sawyer's Allen & Heller 1, G. N. Scoggin sur 22, 17 mi sw Hebbronville, lcn for 3200-ft test.

Jim Wells County—Joy A. McCartney's Scham et al 1, sec 78, Haldeman subd Seeligson Ranch, 4½ mi nw Premont, lcn for 4000-ft test.

Medina County—B. C. Mitchell's Rindhart 2, lcn.

San Patricio County—F. M. Boykin Jr.'s Scriverer 1, sec "J", George H. Pauls subd, Coleman-Fulton Pasture subd, 1 mi nw Midway fld prod, ru for 6500-ft test.

Starr County—General Crude Oil Co.'s Nommo 1, El Panal gr, ½ mi se Yzaguirre fld, ru for 6000-ft test, co rig.

Webb County—J. M. Anderson & L. W. Stieren's Benavides 1, Sec 679, 1½ mi e Carolina-Tex fld, dr 1450 ft, B. N. Falls & Wize, cont.

Webb County—Frank R. William's Benavides 1, sur 692, ½ mi sw Volpe fld, F. W. Dr. Co., contr, mi.

COMPLETIONS

Bastrop County—Marts & Beaven, Inc.'s Walker 1-A, Glasscock sur, 4 mi e Elgin, 100 bbls 36.4-gr oil, some water, dr to 3350 ft, pb 2920 ft, 5½-in at 2650 ft, chalk 2605 ft, broken chalk oil show 2830-50 ft, opens Elgin fld.

Bexar County—A. H. Uechert's Hofferrichter 1, Leal sur, temp abnd 1190 ft.

Duval County—J. L. Collins & Co.'s Adami 3, sec 47, abnd 1510 ft.

Jim Hogg County—Sun's Montalvo 1, Viroritas gr, abnd 4609 ft.

Live Oak County—J. H. Durbin's Davidson 1, Houlihan sur, abnd 1085 ft.

Medina County—B. C. Mitchell's Rinehart 1, sec 593, abnd 510 ft.

Nueces County—Seaboard's Kansas City Life Ins. 1, sec 196, Palo Alto sub, abnd 7224 ft, Stanolind's Thompson 2, lot 24, Wintergarden subd, dr to 7750 ft, pb 6981 ft, perf 6970-75 ft, 2 barrels dist hr, large vol gas, ¼-in ch, 2450 lbs wp, new sand and extends Riverside mi n.

Starr County—Chrest Thompson's Kelsey Bass 1, por 87 & 88, abnd 3520 ft.

EAST TEXAS

FIRST REPORT

Van Zandt County—Hickok P&D Co.-Harry Reynolds' Brown 1, nec of 83.4-ac tr, Leander Smith sur, 5 mi sw Canton, lcn.

COMPLETIONS

Shelby County—Coupar Oil Co.'s Jones 1, John Latham sur, abnd 3226 ft.

Upshur County—Sun's Henderson 1, n cor 27-ac, R. Asher sur, Ore City, elev 281 ft, Georgetown 3784 ft, base Goodland 4950 ft, Paluxy, 4955-5274 ft, 1st anhydrite 6081 ft, massive anhydrite 6676-6924 ft, Pettit 7595 ft, Travis Peak 7808 ft, abnd 7923 ft.

TEXAS GULF COAST

FIRST REPORTS

Matagorda County—Magnolia's Northern Ranch 1, 3 mi n North Markham fld, lot 13, Wm. A. Hurd lge, lcn for 8000-ft test.

Orange County—Jack Frazier & Earl Hankamer's Brown 1, 5 mi s Orange on Sabine River, Lizzie Higginbotham sur, lcn for 8500-ft test.

Polk County—Jordan Dr. Co.'s Kirby Lbr. 1, Dollardsville area, 80-acre tract I&GN sur, sec 25, lcn for 7500-ft test.

COMPLETIONS

Burleson County—Haven Oil Co.'s Lewis Est. 1, 6 mi ne Somerville, C. H. Bennett lge, show gas and dist in Wilcox at 4480-90 ft, abnd 6520 ft.

Fort Bend County—John Mayo & Henry Hummel's Armstrong 1 (Tide Water's Armstrong 2) sw of Needville and ne Boling fld, ne cor Jas. Scott lge, abnd 6535 ft.

Waller County—Kirby Pet. Co. & John Mayo's Donigan 1, se flank San Felipe dome in John McFarland sur, sw in Cockf, abnd 6396 ft.

NORTH TEXAS

FIRST REPORTS

Wichita County—Chas. E. Morrison et al's Cooper 1, blk 3, H. Hastie sur A-92, lcn. K. D. Harmon et al's Snow 1, GC&SF sur A-603, 3 mi s Clara, dr 1220 ft.

Young County—Paul Atchley et al's Guimarin 1, TE&L sec 155, lcn. J. E. McDonald et al's Ward 1, TE&L sec 277, lcn. Wooten & Wilson's R. D. Webb 1, se part A. Rohus sur A-240, lcn.

COMPLETIONS

Archer County—Fresno Oil Co.'s Hammond 1, H. Corzine sur, abnd 1408 ft. Young-Woody Dr. Co.'s Harmel 1, blk 25, Harris subd, abnd 1551 ft.

Foard County—Texas Co.'s Harabal-Margaret 1, se nw nw H&TC sec 431, blk A, anhydrite 1140 ft. Elm Creek 1845 ft, abnd in Ellenberger 7064 ft.

Jack County—C. H. Peterson et al's Kate Hoefle 1, J. W. Barrett sur A-48, abnd 525 ft.

Wilbarger County—Chas. H. Kadane-J. N. N. Fidel's Cochran 1, MK&T Ry. sur A-1891, east offset Harrold pool disc, new pay, 38 bbls 40-gr oil 1 hr ⅜-in ch, est 175 bbls daily, lime 3271-81 ft; Schlaffke 1, near sw se se H&TC sec 3, blk 14, west offset Harrold disc, new pay, 122 bbls initial after 90-qts nitro shot 3165-82 ft in Landreth lime 3165-82 ft.

Young County—J. E. McDonald et al's Marshall 1, nec w½ TE&L sec 275, abnd 650 ft.

WEST TEXAS

FIRST REPORTS

Andrews County—Magnolia's Ralph 1, NEc PSL sec 20, Blk. A-38, rur for 5500-ft test.

Brewster County—J. H. Gordon et al's Thigpen 1, near se nw nw HE&WT sec 193, blk G-4, lcn 2000-ft test.

Pecos County—J. E. Redmond-J. L. Greene & Paul Davis' Iowa Realty Tr. 1, c E¼ of W¼ H&GN sec 29, blk 10, lcn for 6000-ft Ellenberger test. Cardinal Oil Co.'s White-Baker 1-I, near sec nw nw T. C. Ry. sec 21, blk Z, lcn.

Val Verde County—W. A. Miller et al's Davis Bros. 1, sec 4, S. F. 10756, lcn.

COMPLETION

Crockett County—Geo. T. Morris et al's Brock-Hoover 1, I&GN sec 99, blk 1, elev 1864 ft, trace oil 1011-37 ft, abnd 1503 ft.

WEST CENTRAL TEXAS

FIRST REPORTS

McCulloch County—C. M. Joiner Leasing Corp.'s Lawson 1, sec 1093, 22 mi nw Brady, lcn 2200-ft test.

Shackelford County—Fain-McGaha Oil Corp.'s Dawson-Conway 1-B, se sw nw E. T. Ry. sec 196, lcn.

COMPLETIONS

Callahan County—C. J. Kleiner & Acers' Snyder 1, T&NO sec 3, passed up 3,000,000 ft gas, 847-54 ft, abnd 1002 ft.

Jones County—Danciger O&R, Inc.'s Foster 1, se sw T&P sec 13, blk 17, elev 1749 ft, abnd with hfw 2966-76 ft.

McCulloch County—A. K. McCord et al's Nelson 1, E. Grueve sur 957, abnd 331 ft.

Shackelford County—Frank Cann & Wagley's Burton 1, near se nw se University Lands sec 76, abnd 650 ft. Cecil Young et al's Simpson 3, nw se se B.A.L. sec 13, abnd 487 ft.

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NOTICE OF BANKRUPT SALE

Porter Jerry Lease, 39 acres, 7 miles East of El Dorado, Arkansas in Rainbow Field; two wells producing 50 barrels per day; excellent equipment. Bids will be received by undersigned for submission to the Court on Friday, May 9, 1941, 10 o'clock A. M. Terms: Cash or part cash with proper oil payment and security. Sale subject to authority and approval of the Court which may reject all bids. If interested, further information may be obtained from Victor C. Smith, Trustee in Bankruptcy, J. R. Lockhart, Bankrupt, 1400 N. West Ave., Phone 1529, El Dorado, Arkansas.

Ask Standard Ten-Acre Spacing for Iatan-East Howard

Standard 10-acre spacing for wells in the Iatan-East Howard field has been requested by Sinclair Prairie Oil Company. At a hearing before the Texas Railroad Commission last week, the company pointed out that there are 276 wells in the field which have been drilled on that basis, and company engineers expressed the opinion that a well to 10 acres was necessary to get the oil.

The F. H. E. Oil Company asked for a 10-acre tolerance for each well, but this was opposed by Sinclair Prairie Oil Company and by Shasta Oil Company, the latter objecting to any tolerance that applies to wells other than the last one drilled on a lease.

Natural Gasoline Production Increases, Bureau Reports

Daily average production of natural gasoline increased from 6,617,000 gallons in January to 6,848,000 gallons in February, it was reported last week by the United States Bureau of Mines.

Nine percent above the level of February, 1940, the higher average was attributed to outstanding changes in the Panhandle and Texas Gulf districts and in Louisiana.

Total output for the month was 191,730,000 gallons against 205,128,000 gallons in January, the report showed.

Stocks continued to decrease, those at refineries falling from 117,516,000 to 112,308,000 gallons, and those at plants and terminals from 113,064,000 to 110,754,000 gallons, the bureau said.

MEN IN THE INDUSTRY'S NEWS

LAWRENCE VANDER LECK, who started in the California oil industry as a roustabout after graduation from the University of California as a geologist in 1915, last week was elected president of the Oil Producers Agency of California, succeeding L. L. Aubert, who has held that office for the past two years.

Vander Leck, senior vice president and a director of Fullerton Oil Company, with which he has been associated since 1920 following two years with the State Division of Oil & Gas, of which he had become chief geologist. From 1935 until the middle of 1940, Vander Leck was active in the voluntary conservation program of the California industry as chairman of the Central Committee of California Oil Producers, the predecessor committee to the present Conservation Committee of California Oil Producers which administers curtailment activities in the state. He is now a member of the Conservation Committee and a director of both the California Oil & Gas Association and the Independent Petroleum Association of America.

Rush M. Blodget, who has been general manager and executive vice president of the agency since its organization in 1932, was again re-elected.

Four vice presidents were also named, three of them being re-elected. Re-elected were M. A. Machris, Bandini Petroleum Company; L. A. Cranson, Honolulu Oil Corporation, and C. A. Johnson, Holly Development Company. C. P. Watson, Seaboard Oil Company, a director for the past several years, was newly elected a vice president. W. A. Russell, Seaboard Oil Company, was re-elected secretary-treasurer, and D. P. Murdy, Bandini Petroleum Company, assistant secretary-treasurer.

New directors elected are Dwight G. Vedder, Vedder Petroleum Corporation; Dewitt Knox, MacMillan Petroleum Company; W. D. Waltman, Franco-Western Oil Company, and Cecil Rood, of the McVicar-Rood group. Directors re-elected are A. E. Bell, A. E. Bell Corporation; Rush M. Blodget; Cranson; J. J. Doyle, Doyle Petroleum Company, W. H. Geis, Arrowhead Oil Company; R. E. Havenstrite, California Western Oil Company; Johnson and Vander Leck.

WILLIAM R. DAVIS, head of Davis & Company, active operating unit in Southwest Texas, has been elected president of Panhandle Producing & Refining Company, parent of Panhandle Refining Company, which operates in North Texas. He succeeds Roy B. Jones, who becomes chairman of the board, and remains as president of Panhandle Refining Company. Other officers are Henry W. Wilson, Houston, and R. C. Stanford, Wichita Falls, vice presidents, and H. G. Collier, secretary-treasurer. Davis became a substantial stockholder in Panhandle Producing & Refining Company in 1938 through exchange of German-manufactured line pipe and casing for 235,439 shares of the company's stock.

DR. J. WILLIS STOVALL, geological department of the University of Oklahoma, will head a four-day field trip to study the Mesozoic formation in the Oklahoma Panhandle and adjacent areas, starting May 29. V. L. Whiting, district geologist, The Texas Company, is general chairman of the trip, and is being assisted by Dr. Irving Perrine, Dr. Charles N. Gould, Ralph Filmore, Anderson-Prichard Oil Corporation; Jon Sanford and John VanDall, Magnolia Petroleum Company; Graydon Laughbaum, Sinclair Prairie Oil Company, and Hubert Bale and Curtis Hicks, Oklahoma City, consulting geologists.

FRANK BASS, Greta district superintendent for Humble Oil & Refining Company, and J. L. Mowery, Flour Bluff district superintendent, exchanged places in a series of changes announced last week by the company's production department.

Lee Ellzey, district superintendent at Holliday, was transferred to the Livingston district, and is being succeeded at Holliday by W. H. Greer. In other changes, W. D. Latham, assistant district superintendent, was transferred from Navarro Crossing to Gladewater; William P. Petitt, London district construction foreman, was moved to the Southwest Texas division office at Corpus Christi as division construction foreman, and A. J. Shaw, junior petroleum engineer in the West Texas division office, was transferred to Hurdle as district petroleum engineer.

RICHARD H. PENCE, member of the engineering staff of the California Oil Administrator's office, has been called to active duty with the United States Navy. He holds the rank of lieutenant in the Naval Reserve, and is to report for assignment on May 5.

BURKS WHITE, Mt. Pleasant, co-discoverer of two Michigan pools, was reported critically ill last week in a Muskegon hospital. He was stricken while in Muskegon on a business trip.

WILLIAM MISKIMINS, Panhandle district sales manager for Oil Well Supply Company for the past four years, has been appointed sales manager of the recently combined North Texas and Panhandle district, with headquarters at Wichita Falls. Joining the company in 1917 at Houston, Miskimins has been associated with the company's store and sales activities at various points in Texas, Louisiana and Kansas. He was district manager at Wichita Falls from 1932 to 1934. D. R. Smith, sales manager of the company's former North Texas district since 1939, has been transferred to the general office at Dallas to fill a post in the merchandise department.

C. E. BUCHNER, JR., has been named Gulf Coast district representative of Kobe, Incorporated, with headquarters in the company's Houston office under the direction of P. D. Cornelius, district manager. A graduate of Tulsa University's school of petroleum engineering, Buchner has been connected with the engineering department of Sinclair Prairie Oil Company, and more recently he has been active in technical and sales work involving pumping problems on the Gulf Coast.

E. W. HEINRICH has been named a divisional export manager for The Buda Company, Harvey, Illinois. He will have charge of the company's export business between Mexico and the equator. He is former divisional export manager for Caterpillar Tractor Company and Yale & Towne Manufacturing Company, and is a graduate of Yale University.

George H. Koons, division export manager for the company for many years, will have as his territory everything in South America below the equator, and will establish headquarters at Rio de Janeiro and later in Buenos Aires.

ROY S. LAIRD has been appointed sales manager for Ohmite Manufacturing Company, Chicago. He has been with the company five years as sales engineer. He is an electrical engineering graduate of the University of Illinois.

GRADY KIRBY, consulting geologist, is now located at Mt. Vernon, Illinois, his address being Box 528. He also retains an office at 1915 Alamo Bank building, in care of Adams and Lyes, San Antonio, Texas.

R. L. TOLLETT, president of Cosden Petroleum Corporation, on May 1 announced a pay increase for all operating employes amounting to 5 percent, with a minimum increase of 5 cents an hour.

O. W. JONES electric power sales suervisor for Central Power and Light Company, Corpus Christi, Texas, on May 1 became head of the commercial and industrial power department of the company. For the past 14 years, he has been engaged in industrial power work for the company, and previous to that time, was connected with the Texas Power & Light Company in the same capacity. He is past president of the Petroleum Electric Power Association.

PAUL WEAVER, Gulf Oil Corporation, Houston, will discuss "Radioactivity of Rocks—What It Is and What It Means," before the East Texas Section of the American Institute of Mining & Metallurgical Engineering, to be held at the Blackstone Hotel, Tyler, May 5. M. L. Cashion, Gulf Oil Corporation, will pre-

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MEN IN THE INDUSTRY'S NEWS

sent a color motion picture showing capping of a wild well in West Bay, Louisiana.

AUSTIN W. CLARK, who joined The National Supply Company in August, 1940, as assistant vice president, on April 22 was named vice president of the company. Educated at the University of California, Clark had been associated for four years with Sears Roebuck & Company as assistant comptroller. Earlier he had been with Hearst Publications for 14 years as comptroller and treasurer, and for four years was with Cerro de Pasco Copper Corporation in Peru.

EDWARD W. BURBANK, 52, manager of Allis-Chalmers Manufacturing Company's Dallas district office from 1922 to 1940, died April 20 after a prolonged illness which followed a stroke he had suffered in December, 1939. He started with the company as a student apprentice in 1911 after graduating from Tulane University, and served in a variety of engineering and sales capacities.

R. L. LERCH, engineer for Haynes Stellite Company, Kokomo, Indiana, will discuss "Hard Facing" before the annual dinner meeting of the Tulsa section of American Welding Society at 6:30 p.m. May 9, in Mayo Hotel. His talk will be illustrated with a reel of moving pictures. Following the dinner meeting, new officers will be elected.

FRANK PHILLIPS, board chairman; K. S. Adams, president, and all other officers of Phillips Petroleum Company were re-elected at the annual meeting of directors in Bartlesville last week.

D. G. EATON, Gulf Oil Corporation, heads the ticket committee for the semi-annual golf tournament of the Purchasing Agents Association of Tulsa, to be held May 10 at the Indian Hills Country Club. Committee members are Arthur Baty, Acme Lumber Company; Fred Graves, The National Supply Company; Tom Haney, Frick-Reid Supply Corporation; Bernie Page, Continental Supply Company; Glenn Wilson, C. W. Cotton Supply Company; Harry Wilson, Bethlehem Supply Company; D. G. Eaton, Gulf Oil Corporation; W. R. Coleman, Engineering Laboratories, Inc.; J. O. Lindsey, Shell Oil Company; Earl Sour, Skelly Oil Company; R. V. Stephens, Public Service Company; C. M. Taylor, Indian Territory Illuminating Oil Company, and C. W. Wallace, Mid-Continent Petroleum Corporation.

C. E. FEHRENBACH, photographer for Continental Oil Company, Ponca City, has resigned to become demonstration technician for Eastman Kodak Company.

E. H. ANCHORS, former district manager at Oklahoma City for Air Reduction Sales Company, has been named manager of the Birmingham district. He entered the industry 16 years ago with Commercial Acetylene Supply Company, and was southern manager of that company when it was acquired by Air Reduction Sales Company. He has since served as manager at Atlanta, and later at Oklahoma City.

E. S. BLEEKER, chief geologist for the New York Production Division of Gulf Oil Corporation, is on a short trip to South America.

Officials of Standard Oil Company of New Jersey went to Tulsa a week ago to pay tribute to The Carter Oil Company's retiring president, J. J. Conry. Shown on the train en route to Tulsa are Northrup Clarey, public relations director and edtior of the company's house magazine, The Lamp; O. C. Schorp, executive vice president, The Carter Oil Company; Eugene Holman, vice president and director of the New Jersey company; W. R. Finney, Standard Oil Company of New Jersey; Conry; Wallace E. Pratt, vice president and director, and F. W. Abrams, president of Standard Oil Company of New Jersey. Almost entirely hidden from the camera, behind Clarey to the left of the picture, is L. F. McCollum, successor to Conry.

Squeaks from the Bull Wheel

Confidentially

"Did you tell her that what you said was in strict confidence?"

"No; I didn't want her to think it was important enough to repeat."

Cheers for Willie!

"Who gave the bride away?"

"Her little brother, Willie. He stood right up in the middle of the ceremony and yelled, 'Hurray, Louise, you've got him at last'."

Storm Warning

"I don't know what's the matter with that little man over there. He was so attentive a few moments ago and now he won't even look at me."

"Perhaps he saw me come in. He's my husband."

Reference

Young man, do you have references from your last place of employment?

Yes, sir. Here's their letter. It reads: "To whom it may concern: We had Sam Jones working for us three weeks and we can truthfully say we are satisfied!"

Lipstickler

"Nurse, will I have a moustache on my lip like daddy when I grow up?"

"Pretty often, dear, I expect."

Quite an Eyeful

"Where did you get the black eye?"

"I went to a dance hall last night and was struck by the beauty of the place."

Sound Thinking

Once, according to the Captain, he was harpooning a big sperm whale in the South Pacific, when the monster turned, crushed the boat, and scattered the crew into the sea. The Captain found himself in the whale's great jaws, but was able to pull himself out, and was rescued unharmed by his mates.

"Captain," asked a friend, when he heard the story, "what did you think when you found yourself in the jaws of that whale?"

"What did I think? I thought he'd make a hundred barrels—and, by the prophets, he did!"

Super Service

Speaking of banks, there was an Irishman who opened an account, his first. At the end of the month he got a statement, which meant absolutely nothing to him, but he was delighted to receive his checks.

"Sure, an' it's a smart bank I'm after dealin' with," he told a pal.

"It is that now?"

"Faith, an it is. Them fellers was smart enough to get every one av me checks back for me."

Southpaw

"Does it make any difference on which side of you I sit?" she asked.

"Not a bit," he replied. "I'm ambidextrous."

Protection

"Is this the Fidelity Insurance Company?"

"Yes, ma'am. What can we do for you."

"I want to arrange to have my husband's fidelity insured."

Awful Suspense

A man put up at a hotel, and the clerk warned him that the man in the next room was very nervous. When the man went to his room he thoughtlessly threw his shoe down very hard. Then he happened to think of the poor nervous cuss, so he laid the other shoe down very gently. He went to bed and about two hours later he heard a rap at the door. He asked who it was, and the nervous man said: "For heaven's sake, throw that other shoe down, will you?"

Cure

"I understand that Mimi has cured her Scotch boy-friend of stuttering. How did she do it?"

"She called him up long distance collect."

Right Answer

Salesman: I say, sonny, is your mother at home?

Small Boy: Yes, sir.

Salesman (after knocking in vain): I thought you said she was at home.

Small Boy: Yes, sir, but I don't live here.

No. 47111147

"Daddy, may I ask you a question?"

"Yes—son—just one more and that'll be all for tonight—what is it?"

"If a doctor is doctoring a doctor does the doctor doing the doctoring have to doctor the doctor the way the doctor being doctored wants to be doctored, or does the doctor doctoring the doctor, doctor the doctor the way he wants to doctor the doctor?"

Downfall

"The teacher tells me you are at the foot of the spelling class again."

"Yes'm."

"And how did that happen?"

"Got too many z's in scissors."

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NOTES FOR THE Equipment Buyer and User

Filter

THE CUNO ENGINEERING CORPORATION

A filter designed for flows of fluids up to 30 gallons per minute, designated Type EG, has been announced by The Cuno Engineering Corporation, Meriden, Connecticut.

The device employs edge filtration, in which filtration is obtained by passing the fluid containing solids to be removed between strips of metal, separated by spacer pieces of predetermined thickness, placed edgewise to the flow to retard solids larger than the space between the strips. The strips in the filter take the form of wheel-shaped parts or discs separated from each other by spacer pieces.

Cuno Engineering's Type EG Filter

Solids which have accumulated on the cartridge are removed as they reach the cleaner blades by turning the handle of the filter. This operation is carried on while the filter is in operation, collected solids dropping to the sump where they remain until it is convenient to blow them down or otherwise remove them.

The filter has a cast iron head and drawn steel sump for 125 pounds operating pressure. Inlet and outlet connections are 1-inch standard pipe thread. The cartridge is 2¼ inches in diameter by 4 or 5 inches long, and may be obtained of steel, bronze or stainless steel. For special services, the filter is available with cast bronze head and drawn brass sump.

The filter may be mounted to a vertical surface by means of one or two mounting pads located on opposite sides of the filter head. Mounting holes are drilled and tapped when specified. The sump, which is held to the head by a clamping ring and four bolts, may be removed without breaking pipe connections. The filter is equipped with either a vent or relief valve.

Metallizing

Metallizing Engineering Company, 21-07 Forty-first Avenue, Long Island City, New York, has issued Bulletin 42 giving 16 pages on "Metco Metalizing Equipment and the Metallizing Process." It describes applications in industry where the process can be advantageously used for rehabilitating worn shafts and other rotating machinery, as well as to protect metal surfaces against corrosion and other chemical attack. It also covers spraying guns and metallizing accessories.

Water Softener

Elgin Softener Corporation, Elgin, Illinois, has issued Bulletin 605 describing the company's line of zeolite water softeners employing a double-check method of controlling distribution and flow of water. Enlarged close-up views of nozzles and other design features show how loss of zeolite is prevented, and how fast backwash flow rates are made possible.

Winch

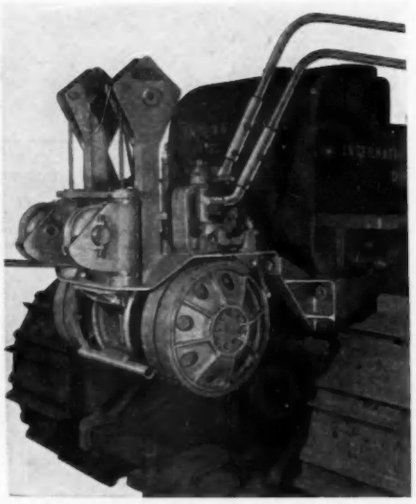
BUCYRUS-ERIE COMPANY

A line of single- and two-drum power control winches for operating cable-controlled equipment with tractors has been announced by Bucyrus-Erie Company, South Milwaukee, Wisconsin.

The winches employ planetary drive, in which clutch and brake drums are separate, each having but one heat-generating surface. Bands are external and contact 93.8 percent of the circumference of the drum to spread friction pressures over a large area so that less heat is generated at any one spot. Bands and drum friction surfaces are exposed to open air to provide prompt heat dissipation.

External clutch and brake bands are interchangeable. An adjustment on each band, in full view of the operator, compensates for wear. Bands may be replaced in the field with ordinary tools and without disturbing an oil seal or bearing.

Rope life is safeguarded by large-diameter aligned sheaves and a long lead angle to provide smooth reeving on the drum.

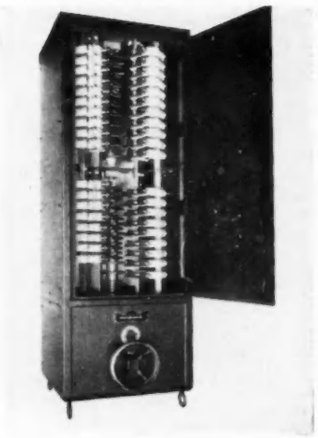


Bucyrus-Erie's Power Control Winch mounted on International Tractor.

Controller

WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY

A motor-operated secondary controller for use with polyphase wound-rotor motors on fan, pump and similar drives, has been announced by Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pennsylvania.



Westinghouse Secondary Controller

Designated SC controller, it provides either 13 or 20 balanced points of control by varying external resistance in the motor secondary winding. Enclosed in a self-supporting steel cabinet, the unit has cam-actuated contactors arranged for sequential operation in pairs from a common motor-driven cam shaft. Individual cams are designed to give quick-make and quick-break contact action. Pure silver inlays are provided on contact surfaces to assure excellent current conductivity and avoid heating due to oxidation of the copper base. Separate copper arcing contacts prevent burning or pitting of main contact surfaces.

The controller drive mechanism consists of a pilot motor, a gear reduction unit, and a Geneva gear for angular movement of the cam shaft. Step-by-step action is provided by a gear and pinion arrangement to move the controller one full position or point for each gear revolution. Over-travel protection is provided by auxiliary cam-actuated switches. The motor may be supplied for 115 or 230 volts DC and 110, 220 or 440 volts AC.

Optional features, including remote position indication, follow-up attachment and time delay operation, can be provided.

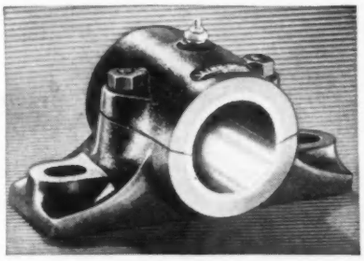
Bearing

LINK-BELT COMPANY

A babbitted-bearing, designated Common Flat Box Series 2-1200 and designed for moderate speed and power requirements, has been announced by Link-Belt Company, 307 North Michigan Avenue, Chicago. It is available from stock in 24 sizes, for shafts of ½ to 3 inches in diameter.

Design features include sloping sur-

NOTES FOR THE Equipment Buyer and User



Link-Belt's Series 2-1200 Bearing

faces between cap and base to maintain concentricity and to relieve the cap bolts of direct strain from side thrust; removable shims between base and cap to provide for needed adjustment; reinforced cap bolt lugs for proper distribution of metal where holding strain is exerted; cap bolts that do not protrude above top of bearing; babbitt of a formula selected in operative tests for maximum service; bore broached to size with cap in place to provide concentricity and proper running fit on shaft with less friction and lower power consumption; bearing ends finished to provide accurate bearing surfaces for collars, pulleys, gears, sprockets or other limiting devices; bearing cap tapped for grease cup or hydraulic fitting with a groove in cap bore to provide efficient distribution of lubricant; base ground to close tolerance; base recessed to compensate for inaccuracies in surface of the structural support; heads of cap bolts easily accessible and anchored to prevent turning, and elongated holes for base hold-down bolts to provide adjustment for shaft alignment.

Pipe Finder

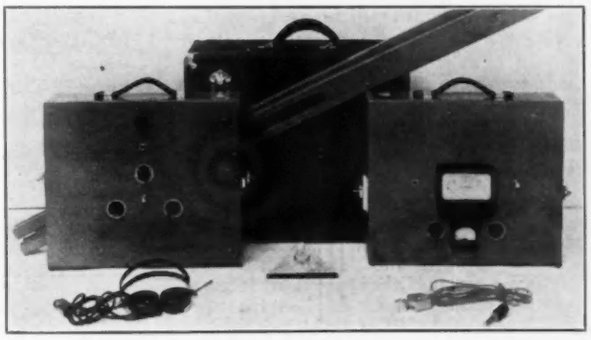
FISHER RESEARCH LABORATORY

A pipe finder employing conductive, inductive and radio-balance means of detection, designated M-Scope Model 1941, has been announced by Fisher Research Laboratory, 1961 University Avenue, Palo Alto, California.

The equipment is designed to locate position of buried pipe lines or metallic conductors, pipe bends, dead ends, valves, covered manholes, drip boxes, cast-iron bells, insulated joints, stubs or services, the center of a buried pipe or metallic conductor, depth of a pipe line or metallic conductor, unknown metallic hazards in the path of excavators, and points of obstruction in a plugged sewer.

Two visual indicators are employed, one for centering pipes and cables and determining their depth, and the other for tracing pipes. The instrument does not have to be grounded, and power output can be regulated in five steps. It is rated to trace pipes or cables for 1000 feet.

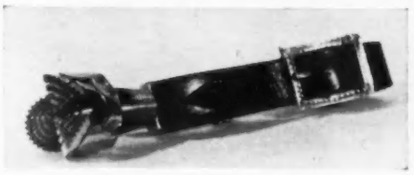
Non-conductive lines, such as sewer, may be traced by pushing a steel tape or wire through the line and connecting it to the conductive terminal on the transmitter housing. The equipment consists of a transmitter, receiver, earphones, spirit level and conductive wire with clips. A set of handles is included for operating the instrument when it is necessary to use it coupled.



Fisher Research Laboratory's M-Scope Pipe Finder

John N. Martin Offers Equipment Model Service

A service of making on order scale models of oil-field equipment for demonstration or premium purposes has been inaugurated by John N. Martin, 4310 Kyle Street, Houston.



Martin's Rock Bit Watch Fob

Martin at present is offering a novelty jewelry piece in the form of a 1/10-scale rock bit for use as a watch fob. All parts of the bit are machined and nickel plated. It comes equipped with strap and buckle.

Models of other oil field equipment will be made to order.

Fluid Mechanics Contains Chapters of Oil Interest

Designed primarily as a text-book for junior engineering students, to prepare them for industrial applications and problems, "Fluid Mechanics," by Glen N. Cox and F. J. Germano, of the University of Louisiana faculty, published by D. Van Nostrand Company, finds oil industry usefulness principally in a chapter on Pipe Flow, and to a lesser degree in the chapters on Viscosity and Measuring Devices.

Roughly divided into five parts: hydrostatics, fluid measurement, fluid transportation, fluid dynamics and centrifugal pumps, much of the ground covered is for the purpose of clarifying

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the understanding of one part prior to its application with another.

Written in text-book style, with problems and charts at the end of each section, the book requires engineering training and higher mathematics for its effective application, but with the required background, presents an interesting and able study of the mechanics of industrial fluids, including both liquids and gases.

Fred E. Cooper Opens Houston Branch With Plank in Charge

Fred E. Cooper opened a new branch plant at 1418 Franklin Street, Houston, May 1.

The new branch will carry a comprehensive line of Allis-Chalmers well servicing units, winch tractors and skid-winch types along with a complete line of Allis-Chalmers oil-field power engines. Hoisting and drilling units stocked will be those suitable for use in the Gulf Coast fields. A service and parts department will be maintained.

George Plank, formerly in charge of the Longview branch, has been named manager.

Ammeters

Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pennsylvania, has issued Catalog Section 43-414 describing its line of improved AC and DC ammeters and voltmeters for general use. The ammeters are available in ranges from five to 125 amperes, and the voltmeters in ranges from 90-140 to 450-700 volts. Switchboard, portable, wall and socket types are described, with attention given to application. Operation and construction details are explained.

LETTERS

It Was a Phenomenon

PUBLISHER, THE OIL WEEKLY:

In your editorial comment, "The Need for Illinois," in the April 21 issue, you say, "Illinois has just passed through a phenomena." Since phenomena is the plural of phenomenon there is no such thing as "a phenomena." Better have your editor edit your editorial comment.

UNSIGNED

Thanks to the correction offered by the anonymous reader in Tulsa. He is right, of course. Illinois "has passed through the phenomenon which years ago was common to the oil industry—an oil boom." And we will speak to the gentleman who edits our copy—RLD.

Old Timer Wants Job

Says "Old Bill Halley," as he describes himself, in a letter, "I want a job, I'll go anywhere and I can do almost anything. I can fire a boiler with oil or gas; run Joseph Reid gas engine using crude gas; run a steam-driven rig (have done it in British Guiana, Trinidad, South America, and Texas for 38 years); drill out liners, etc., etc. In fact there isn't much around a lease I can't do. I want to settle down and I'd appreciate it if you could help me." Inasmuch as the first story THE OIL WEEKLY ever published about a foreign operation featured "Old Bill" in the role of driller, we are glad to pass the word on. His address is 2017 Chapman Street, Houston, Texas, and his phone number P. 2425.

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* Indicates that detailed information on the manufacturer's products or services may be found in the 1941 edition of The Composite Catalog of Oil Field & Pipe Line Equipment.